

3.0 AFFECTED ENVIRONMENT

This section describes the affected environment of the BLM-administered public lands within the NEMO Planning Area. A complete description of the resources can be found in the CDCA Plan and EIS and is incorporated by reference (40 CFR 1502.21). The existing management situation for the Planning Area is summarized in Appendix K. A separate, more detailed, existing management situation for the desert tortoise and the resource values and uses of its habitat in the NEMO Planning Area was prepared in April, 1998, (Foreman 1998) and is available for review at local BLM offices in Needles, Barstow, and Riverside, California.

The NEMO Planning Area (See Chapter 7, Figure 1) is a large and diverse region in southeastern California¹ characterized by several north-south trending, parallel mountain ranges separated by narrow valleys in the north and by wide valleys in the south. The Planning Area is considered to contain parts of both the Great Basin and Mojave Deserts. BLM-managed public lands in the Planning Area exists in three distinct and geographically separated regions.

The northernmost area of public lands includes those lands north and west of Death Valley National Park, and north of the Fort Irwin National Training Center. This area is the westernmost extent of the Great Basin mountain ranges and their valleys, including the Panamint Range, the Inyo Mountains, and the Argus Range. The mountain ranges are moderately to very steep, and the higher elevations tend to get more rain than Death Valley to the east. Although overall annual precipitation levels are still within the desert range, short-term flood flows are not unusual.

The central area of public lands includes those lands east and south of Death Valley National Park, between Nevada on the east and State Route 247 on the west, extending south to the peaks of the Kingston Range in a line approximately parallel to and about a mile south of the Inyo/San Bernardino County line. This is the Amargosa watershed -- a complex of mountain ranges feeding into the Amargosa River and its tributaries to provide a desert oasis for wildlife and humans since prehistoric times. This area provides the first trails and settlements of men and women from the east seeking ranching and farming opportunities in Southern California.

The south-central and southern area of public lands includes those lands from the Kingston and Mesquite Range on the north, between Nevada on the east, and six miles east of Baker or the Mojave National Preserve on the west to I-40 on the south. In this area the valleys and mountains become more gently rolling, elevation rises gently upward from the Baker sink on the west to the Halloran Summit and then tapers down somewhat to the Nevada border. This is a country of wider open spaces, more and larger dry lake beds, somewhat more consistent, but still very low rainfall that generally results in good fall and spring vegetation growth. This is desert tortoise habitat. Primary land uses are grazing, mining, and major transportation and utility corridors.

¹ The Planning Area also includes a very small portion of land in Nevada that is entirely within the Death Valley National Park (DVNP), which is described and analyzed in a separate planning document specific to DVNP.

3.1 VEGETATION

3.1.1 GENERAL VEGETATION

The vegetation within the Planning Area is divided into the Mojave Desert and Great Basin subprovinces as classified by *A Manual to California Vegetation* (Sawyer and Keeler-Wolf 1995). The Mojave Desert covers most of the Planning Area and the Great Basin covers less than ten percent of the total area. Most of the vegetation of the Planning Area can be classified within Creosote bush/white bursage, Creosote bush scrub, Mixed saltbush, Joshua tree, Blackbush, and Mojave yucca vegetation series. Fremont cottonwood, Mixed willow, Black willow, and Water birch series do not cover large areas, but the structure and variety of plants and the variety animals found in these series make them a significant resource to maintain.

The 18 grazing allotments administered by BLM (See Chapter 7, Figure 2a) have numerous vegetation series. Refer to Table 3-1 for a list of the most abundant of the series in the allotments.

Table 3-1: Vegetation

| Allotment Name | Vegetation Series | Allotment Name | Vegetation Series |
|------------------|---|--------------------|--|
| Clark Mountain | Creosote bush-white bursage; Creosote bush; Hop-sage; Indian Ricegrass | Crescent Peak | Desert needlegrass; Joshua tree; |
| Deep Springs | Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; Combination of Fremont cottonwood, mixed willow, and water birch | Eureka Valley | Creosote bush-white bursage; Winterfat Greasewood |
| Fish Lake Valley | Creosote bush-white bursage; Greasewood; Hopsage | Horsethief Springs | Creosote bush-white bursage; Creosote bush; Nolina; Mojave yucca |
| Hunter Mountain | Creosote bush-white bursage; Greasewood; Joshua tree; Mixed saltbush; California Juniper | Jean Lake | Big galleta |
| Kessler Springs | Big galleta; Creosote bush; | Oasis Ranch | Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; Combination of Fremont cottonwood, mixed willow, and water birch (riparian) |
| Last Chance | Creosote bush-white bursage; Winterfat; Greasewood; Hopsage; California Juniper | Piute Valley | Creosote bush; Mojave yucca; Creosote bush-white bursage; Mesquite |
| Pahrump Valley | Creosote bush; Creosote bush-white bursage; Allscale | Valley View | Creosote bush; Mojave yucca |
| South Oasis | Creosote bush-white bursage; Greasewood; Joshua tree; Mixed saltbush; hopsage | Whitewolf | Creosote bush-white bursage; Greasewood; Hopsage |
| Valley Wells | Creosote bush; Mojave yucca | | |

The NEMO Planning Area contains a number of Unusual Plant Assemblages (UPAs) designated in the CDCA Plan for emphasis in the environmental review process and for special monitoring attention. UPAs in areas affected by the NEMO planing effort include Salt and Brackish Marsh (near Carson Slough), Valley Well Shadscale Scrub (in Shadow

Valley), Piute Valley Smoke Tree Assemblage in Piute Valley, and Riparian and River Bottomland along the Amargosa River and in the Inyo Mountains and Panamint Range.

3.1.2 SPECIAL STATUS PLANTS

Two federally-listed plant species - Amargosa niterwort (endangered) and Ash Meadows gumplant (threatened) - are known to occur on BLM lands in the Planning Area; critical habitat has been designated for both species in the Carson Slough area. (See Chapter 7, Figure 10) The two critical habitat units are separated by a 1.2 mile-wide stretch of public lands, and both units, as well as the area between these units, are suspected to support the federally-listed threatened spring-loving centaury. In addition, two other State-listed plant species and 23 BLM California sensitive plant species occur or potentially occur in the NEMO Planning Area. See Appendix I for a complete list of the special status plant species.

Often, special status plants are associated with unusual soils or a series of particular site conditions creating unusual microhabitats. For example, special status plants are often found in the Planning Area in the presence of limestone outcrops, granitic boulders, calcareous or dolomitic soils, or conditions conducive to perennial soil hydration (e.g., alkaline meadows and playas, desert springs and riparian areas).

The Clark Range, Kingston Range and Mesquite Mountain, as well as the Amargosa River Basin and Lower Carson Slough, are focal areas for a number of special status plants. Additionally, several High Sierran-influenced canyons and peaks in the Inyo and Panamint Mountains, notably Pleasant and Wildrose Canyons, in the latter range, and around the Cerro Gordo Peak area, in the former mountain range, contain an unusually high number of special status plants.

The MUC M designated area at the south end of the Inyo Mountains contains several special status plant species, including: Inyo hulsea and Jaeger's caulostramina. Additionally, Panamint Mountains lupine is known from a MUC "M" area in the Panamint Mountains; other special status plant species are suspected to occur in this area as well.

3.1.3 BIOLOGICAL SOIL CRUSTS

In arid and semi-arid lands, the cover of vegetation is often sparse or absent. The soil surface in open spaces between the higher plants is generally not bare of life, but covered by a community of highly specialized organisms. These communities are referred to as biological soil crusts, or cryptogamic, cryptobiotic, microbiotic, or microphytic soil crusts (Harper and Marble 1988; West 1990). They may constitute up to 70% of the living cover in some plant communities (Belnap 1994), including in substantial portions of the NEMO Planning Area.

Biological soil crusts consist of cyanobacteria, green algae, lichens, mosses, microfungi, and other bacteria. Cyanobacterial and microfungal filaments weave throughout the top

few millimeters of soil, gluing loose soil particles together and forming a matrix which stabilizes and protects soil surfaces from erosive forces (Cameron, 1966; Belnap and Balun 1974; Friedman and Ocampo-Paus 1976; Belnap and Gardner 1993).

Biological soil crusts conduct many important functions in arid and semi-arid lands. In the large interspaces between plants biological soil crusts are an important source of fixed carbon. Interspace soils between plants are often stabilized by biological soil crusts. Biological soil crusts protect soils from both wind and water erosion by binding the soil particles. Cyanobacteria and cyanolichens can be an important source of fixed nitrogen for plants and soils in desert ecosystems (Evans and Ehleringer 1993).

3.1.4 RIPARIAN/WETLAND

In recent years, there has been increasing awareness and understanding of the economic benefits of wetland areas. Healthy wetland systems purify water as it moves through the vegetation and act like a sponge by retaining water in stream banks and ground water aquifers. Wetland areas can absorb and dissipate much of the energy of floodwaters.

Wetland-riparian vegetation is dependent upon the water provided either by the running water of rivers, streams, and large springs (*lotic* habitat) or by the standing water of lakes, ponds, seeps, bogs, small springs and meadows (*lentic* habitat). The vegetation of riparian-wetland areas usually contrasts sharply with the vegetation of the adjacent uplands. Although the area covered by wetland-riparian vegetation is small compared to upland vegetation, the importance of this vegetation to a variety of resources is well recognized. For example, more species and greater numbers of wildlife are found in riparian environments than in any other habitat type (Kattelman and Embury 1996; Thomas et al. 1979; Kauffman and Krueger 1984; Schulz and Leininger 1991). Wetland-riparian vegetation provides important sources of forage for domestic livestock (Clary and Webster 1990). Riparian vegetation is very important to the proper functioning of the adjacent stream, providing shading and adding chemical energy and nitrogen through the plant materials and insects that fall into the stream (Kattelman and Embury 1996; Meehan et. al. 1977; Cummins et al. 1989). Riparian vegetation protects stream banks from erosion and traps sediments and nutrients coming from upstream, thereby ensuring high water quality (Kattelman and Embury 1996). Healthy stands of riparian vegetation can ameliorate the adverse effects of upslope disturbances (Schlosser and Karr 1981).

Temporal variation in wetland-riparian vegetation occurs in response to disturbance. Natural disturbances due to flooding are common in riparian habitats. The degree of change to the vegetation in response to floods depends upon the severity of an individual flood and the condition of the riparian vegetation at the time of the flood. Very severe floods can remove much of the vegetation. When this occurs the vegetation progresses through a series of different successional stages until a relatively stable stage is reached. Manning and Padgett (1995) provide an excellent description of community types and successional pathways of riparian areas in the Great Basin.

Wetland areas also are focal points for recreation, including fishing, hunting, camping, boating, hiking, nature observation, photography, and picnicking. Many of these activities associated with wetland areas generate high economic values.

Riparian communities occur near desert springs and along flowing streams and are of special interest. Under the CDCA Plan all riparian areas in the Planning Area are designated as Unusual Plant Assemblages (UPAs), which are to be given special consideration in management decisions.

The amount of scientific data and history of BLM managed wetland habitats varies greatly by location. The best information available on wetland habitats for this EIS is Functioning Condition Assessment data. (See Appendix J) There are three categories of functioning condition: 1) proper functioning condition, 2) functioning-at-risk condition, and 3) non-functional condition. Detailed definitions of these categories are available in BLM's Technical References 1737-9 and 1737-11.

Many of the desert spring riparian areas within the NEMO Planning Area have been rated as non-functional or functioning-at-risk (Refer to Appendix J), primarily resulting from water diversion, weed establishment, vehicle use, mining, burro use or livestock grazing. Many riparian riverine segments have similarly been rated as functioning-at-risk due to upstream water use, groundwater overdraft and/or exotic plant (saltcedar or *Tamarix ramosissima*) establishment.

The major stream channel and riparian attributes that are assessed when determining functional condition are hydrologic, vegetative, and soils/erosion. Land uses can impact all of these attributes. For example, livestock could consume enough of the streambank vegetation that there would not be adequate vegetation cover to protect stream banks during high flows. If a stream is not rock armored along its banks and there is not adequate vegetation, the stream bank and associated riparian habitat may erode into the stream channel during high flows. This erosion/sediment might be more than the stream channel could handle and cause the channel to decrease in depth and widen. If a stream channel does not have the correct width/depth ratio for the landscape setting in which it occurs, then the stream cannot provide the proper habitat for the fish, amphibians, insects, etc., that should occur in that stream.

3.1.5 NON-NATIVE INVASIVE PLANTS

A number of weeds are of concern in the Planning Area. Mustards and thistles are present and take advantage of favorable weather conditions. Tree of Heaven (*Ailanthus altissima*) and African rue (*Peganum harmala*) are known to occur in a few sites, and believed to occur elsewhere. Filaree (*Erodium cicutarium*), red brome (*Bromus rubens*), and Mediterranean split grass (*Schismus barbatus*) can be found throughout the Planning Area at varying densities based on weather conditions. Black Locust (*Robinia pseudoacacia*) and Honeylocust (*Gleditsia triacanthos*), which both infest spring-fed riparian areas in the same manner as Tree of Heaven greatly impact critical spring-fed riparian areas, and replace native vegetation. Both are known to occur at many old

mining sites in the Planning Area. Halogeton (*Halogeton glomeratus*) infests a small area on either side of Interstate 15 several miles east of the rest stop in Shadow Valley and it appears not to be spreading. Tamarisk (salt cedar) (*Tamarix ramosissima*) is of great concern because it easily spreads in riparian or wetland areas and if not treated with prescribed burning, mechanical methods, or herbicides it will eventually be the only vegetation to occupy the site. Athel Trees (*Tamarix aphylla*) is not considered an invasive, but can cause problems at spring sites due to the tremendous amount of water they use and transpire into the atmosphere. This has been a problem at several sensitive fish habitats in the planning area. Other than tamarisk (salt cedar), most weed control efforts have been limited. Most weeds, other than salt cedar, take advantage of wetter years and native plants appear to have the advantage during drier years.

3.2 WILDLIFE

The complex combination of soil types, topography, vegetative communities and climatic conditions found in the Planning Area supports numerous wildlife habitats and many endemic (i.e., found only here) animal species. The Planning Area is well known for its species diversity, particularly of reptiles, neotropical migratory birds, small mammals and aquatic insects. Major wildlife habitats or special habitat features in the Planning Area, in addition to the plant communities listed previously, include: sand dunes, rocky outcrops, talus slopes, cliffs, mineshafts, adits, streams, and spring pools.

3.2.1 GENERAL WILDLIFE

Over 35 reptile species are known to occur within Planning Area, with representative species including the Western Whiptail Lizard (*Cnemidophorus tigris*), Zebra-tailed Lizard (*Callisaurus draconoides*), Side-blotched Lizard (*Uta stansburiana*), Desert Iguana (*Dipsosaurus dorsalis*), Chuckwalla (*Sauromalus obesus*), Sidewinder Rattlesnake (*Crotalus cerastes*) and Speckled Rattlesnake (*Crotalus mitchelli*). Seven amphibian species are also known to inhabit some of the springs, streams and moist areas found in the planning area. These include the Inyo Mountains Slender Salamander (*Batrachoseps campi*), Red-spotted Toad (*Bufo punctatus*), Western Toad (*Bufo boreas*), Great Basin Spadefoot Toad (*Scaphiopus intermontanus*), Pacific Tree Frog (*Hyla regilla*), Leopard Frog (*Rana pipiens*) and Bullfrog (*Rana catesbeiana*). However, the latter species is an introduced, non-native species. The presence of a eighth species, the Amargosa Toad (*Bufo boreas nelsoni*) is also suspected.

The many varied habitats which occur within the Planning Area also support over 150 avian species, most of which are classified as neotropical migratory birds. Some habitats support both nesting and migratory use, whereas others, particularly riparian areas, support extensive migratory use.

Horned Lark (*Eremophila alpestris*), Greater Roadrunner (*Geococcyx californianus*), Le Contes Thrasher (*Toxostoma lecontei*), Black-throated Sparrow (*Amphispiza bilineata*) and Common Raven (*Corvus corax*) are known to occur throughout the Planning Area, particularly in Creosote Bush (*Larrea tridentata*) Scrub and Joshua Tree (*Yucca*

brevifolia) plant communities. Phainopepla (*Phainopepla nitens*), Yellow Warbler (*Dendroica petechia*), Verdin (*Auriparus flaviceps*) and Gambel's Quail (*Callipepla gambelii*) are common to Mesquite (*Prosopis* spp.) Bosques in the region; whereas Northern Flicker (*Colaptes auratus*), Blue Grosbeak (*Guiraca caerulea*), Ladder-backed Woodpecker (*Picoides scalaris*), Ash-throated Flycatcher (*Myiarchus cinerascens*) and Western Kingbird (*Tyrannus verticalis*) frequent Willow (*Salix* spp.) and Cottonwood (*Populus fremontii*) dominated riparian areas.

Bewick's Wren (*Thryomanes bewickii*), Blue-gray Gnatcatcher (*Poliophtila caerulea*) and Long-eared Owl (*Asio otus*) are known from wash habitats that support heavy shrub cover; whereas Say's Phoebe (*Sayornis saya*), Rock Wren (*Salpinctes obsoletus*) and Canyon Wren (*Catherpes mexicanus*) are common to less vegetated canyons. Foothill areas supporting Pinyon (*Pinus monophylla*) and Juniper (*Juniperus* spp.) stands support birds such as Bushtit (*Psaltiriparus minimus*), Yellow-rumped Warbler (*Dendroica coronata*), Scrub Jay (*Aphelocoma coerulescens*) and Pinyon Jay (*Gymnorhinus cyanocephalus*). In forested mountains, the White-breasted Nuthatch (*Sitta pygmaea*), Mountain chickadee (*Parus gambeli*), Townsend's Solitaire (*Myadestes townsendi*) and Great Horned Owl (*Bubo virginianus*) are known to occur. Raptors with large territories, such as Prairie Falcon (*Falco mexicanus*) and Golden Eagle (*Aquila chrysaetos*), can range over all these habitats, but suitable nesting sites are usually limited to cliff and canyon areas.

Numerous small mammals also call the Planning Area home. Representative species include Canyon, Cactus and Deer Mice (*Peromyscus* spp.); Botta's Pocket Gopher (*Thomomys bottae*), Antelope Ground Squirrel (*Ammospermophilus leucurus*) and Round-tailed Ground Squirrel (*Spermophilus tereticaudus*); Kangaroo Rats (*Dipodomys* spp.) and Pocket Mice (*Perognathus* spp.); and Black-tailed Hare (*Lepus californicus*), as well as Desert Cottontail (*Sylvilagus audubonii*). Large mammals common to the region include Badger (*Taxidea taxus*), Ringtail (*Bassariscus astutus*), Kit Fox (*Vulpes macrotis*), Bobcat (*Felis rufus*), Coyote (*Canis latrans*), Mountain Lion (*Felis concolor*) and Mule Deer (*Odocoileus hemionus*).

3.2.2 SPECIAL STATUS ANIMALS

State and federally-listed animals found on public lands in the Planning Area include the following:

- the State and federally-listed-threatened desert tortoise (*Gopherus agassizii*);
- the State and federally-listed endangered Amargosa vole (*Microtus californicus scirpensis*);
- the State and federally-listed endangered least bells vireo (*Vireo bellii pusillus*);
- the State and federally-listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*);
- The State-listed endangered and federally-listed threatened Inyo California towhee (*Pipilo crissalis eremophila*)

- the State-listed endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*);
- the State-listed threatened Mohave ground squirrel (*Spermophilus mohavensis*); and
- the State-listed threatened Swainson's hawk (*Buteo swainsoni*).

Several BLM-designated sensitive wildlife species also occur within the Planning Area. Sensitive wildlife species are generally associated with specialized habitats, such as desert bighorn sheep (*Ovis canadensis nelsoni*) and their preferred mountainous terrain; mineshaft, cliff and rock crevice-dwelling animals (eight bat species) and their extensive habitat in the Planning Area; western burrowing owl (*Athene cunicularia-hypugea*) and mixed Mojave woody scrublands or creosote bush scrublands; Amargosa River & tributary riparian-obligate species, such as the Amargosa pupfish (*Cyprinodon nevadensis amargosae*) and the Amargosa speckled dace (*Rhinichthys osculus amargosae*); the Mojave Fringe-toed Lizard (*Uma scoparia*), and its limited sand dune habitat; Gila Monster (*Heloderma suspectum*), and its patchy succulent scrub-canyon habitat and the endemic Shoshone cave whip-scorpion (*Trithyreus shoshonensis*) and its unique subterranean habitat.

Refer to Appendix I (Special Status Species) for a complete description of listed, sensitive and special concern species occurring within the NEMO Planning Area. A complete list of known species (in 1980), which occur within the Planning Area, is found in the *California Desert Conservation Area Plan, Final Environmental Impact Statement and Proposed Plan, Appendix IX: Wildlife* and *Appendix X: Vegetation*.

The remainder of the discussion of biological resources focuses on specific listed or sensitive species affected by one or more proposed amendments. Some of the NEMO proposals are specifically aimed at addressing the needs of rare or declining species.

3.2.3 DESERT TORTOISE

There are five distinct geographical areas of desert tortoise habitat in the Planning Area which were identified upon BLM delineation of desert tortoise categories in 1993. These include:

- Piute-Fenner Valley;
- Ivanpah Valley;
- Northern Ivanpah Valley;
- Shadow Valley; and
- Pahrump Valley.

Three of these five areas - Piute-Fenner Valley, Ivanpah Valley, and Shadow Valley - include critical habitat. Critical habitat was identified by USFWS in 1994, and it constitutes their assessment at that time of the lands that are essential to achieve recovery. All of Piute-Fenner, Ivanpah, Northern Ivanpah, and Shadow Valleys are designated by BLM as Category I desert tortoise habitat. BLM's goal for Category I desert tortoise

habitat is to maintain a viable population of tortoises. Pahrump Valley is BLM Category III desert tortoise habitat; the goal there is to mitigate impacts to the extent possible.

Populations have declined precipitously in many parts of the range, but populations in NEMO vary from stable to declining. Threats to populations include habitat loss, diseases, excessive predation on young tortoises by ravens, collecting, shooting, vehicle kills, and other factors.

3.2.4 AMARGOSA VOLE

Critical habitat for the Amargosa vole, a small rodent, has been designated (Federal Register Volume 49, No. 222, 1984) and includes approximately 2,440 acres of public land. Located along the Amargosa River between the towns of Shoshone and Tecopa, California, critical habitat primarily encompasses lands in the Grimshaw Lake Natural Area ACEC vicinity and immediately south. Additional suitable riparian habitat for the vole occurs on both public and private lands located to the south in the Amargosa Canyon Natural Area ACEC and to the north as far upstream as the town of Shoshone. The public and private lands between the two existing ACECs form a critical link between the two natural ACECs protecting the species.

3.2.5 NORTH MOJAVE DESERT BATS

The Planning Area supports at least nine different bat species, eight of which are designated as California BLM sensitive species (see Appendix I). Bats use both natural habitat features, such as rock crevices, rocky outcrops, cliffs, caves, desert washes and riparian and human-created habitat features, such as historic mine-workings, mineshafts, adits and abandoned buildings. The Amargosa River and its tributaries (China Ranch Wash, Salt Creek), together with the Kingston Mountain-Silurian Hills-Kingston Wash area, represent a bat concentration area in the Planning Area.

The Silurian Hills is a semi-mountainous region located in Silurian Valley. It is bounded on the west by a flat plain, Silurian Dry Lake and Salt Creek; on the east by a flat plain and the Shadow Mountains, on the north by Kingston Wash and Valjean Dunes, and on the south by the Hollow Hills Wilderness. Public lands in this area total approximately 7,400 acres, with a scattering of private lands located immediately to the south. Mining occurs on some of the private parcels. Numerous cliff faces and crevice slopes are common in the Silurian Hills. Mine shafts and adits are also quite numerous, and at least four bat species are known to use these shafts and adits as roosting, hibernation or maternity sites. Additional bat species are suspected to use the area as well.

Habitats crucial for a wide variety of desert bat species surround Silurian Hills, i.e., desert washes, springs, desert riparian areas, sand dunes, crevice slopes, wide plains and mountains. The Kingston Wash is suspected to be a major bat foraging area and flight travel corridor into the Kingston Mountains. The Salt Creek Hills and riparian area are both a major bat foraging and roosting area and are suspected to serve as a crucial flight travel corridor into the Avawatz Mountains where numerous spring foraging and roosting

sites occur. This same corridor is also important for bat species that use the Ibex Dunes and Dumont Dunes.

3.2.6 INYO MOUNTAINS SLENDER SALAMANDER

Amphibians are rare in the desert as they depend on pools and streams for reproduction. The Inyo Mountains slender salamander (*Batrachoseps campi*) is an uncommon species known only from several canyons of the west and east slopes of the Inyo Mountains. They are associated with permanent springs or seepage, primarily below the pinyon-juniper belt where they reside under rocks on moist soil in shaded, steep-walled canyons (Morey 1988). Giuliani (1976) found the Inyo Mountains slender salamander in a majority of the canyons on the east slope of the Inyo Mountains, including Hunter and Craig Canyons and Willow Creek.

3.2.7 INYO CALIFORNIA TOWHEE

The total known range of the Inyo California towhee lies in the southern Argus Range at elevations ranging from 2,680 ft. to 5,630 ft. The Inyo California towhee was listed as a State endangered species and a federally threatened species under the Endangered Species Act due to the small population, its restricted range, and the potential destruction of its habitat. (LaBerteaux and Garlinger 1998). Potential threats to its habitat include wild burros and horses, mining, recreational activities, cattle grazing, water exportation, and encroachment by rural residents.

Critical habitat (5,802 acres) was designated for the towhee in 1987. It includes riparian habitat at springs as well as upland and streambed habitats surrounding the springs. Only a small portion (less than 5%) of towhee critical habitat occurs within the NEMO Planning Area; the majority of the critical habitat occurs to the south and west, within the West Mojave Planning Area.

The following discussion of habitat for the Inyo California towhee is taken from The Recovery Plan for the Inyo California Towhee (U.S. Fish and Wildlife Service. 1998):

Inyo California towhees nest and forage in areas of dense riparian vegetation dominated by willows (*Salix* spp), Fremont cottonwood (*Populus fremontii*), and desert olive (*Forestiera neomexicana*) with associated rubber rabbit brush (*Chrysothamnus nauseosus*) and squaw waterweed (*Baccharis sergiloides*). They also nest in shrubs of the upland community adjacent to riparian habitat and use the upland habitat as their principal foraging grounds. This habitat consists of Mojave creosote bush (*Larrea tridentata*) scrub or Mojave mixed woody scrub. (LaBerteaux 1994).

LaBerteaux and Garlinger (1998) conducted an Inyo California towhee survey during the 1998-breeding season. A total of 640 adult towhees representing an estimated 317 pairs and 23 single adults were detected at 210 sites within the Argus Range. Prior to the 1998 survey, the towhee population was estimated to be no more than 200 individuals. Along

with an increase in the numbers of birds detected, the 1998 census documented a range expansion of 15 km to the north of the previous known range. Seventy-three percent of the population occurred on U.S. Navy lands, 25% on BLM lands on the east slopes of the Argus Range, and 2% on State-owned and private lands.

3.2.7 LEAST BELL'S VIREO

Least Bell's vireo (*Vireo bellii pusillus*) is a State and federally-listed endangered species. The vireo was federally-listed in 1986 and critical habitat was designated in February 1994. The NEMO Planning Area does not contain critical habitat for this species. At the time of listing, an estimated population of the least Bell's vireo was only 300 pairs (RECON 1989).

The least Bell's vireo is a small gray migratory songbird that has declined dramatically in both numbers and distribution. This subspecies was once widespread and abundant throughout the Central Valley and other low elevation riparian zones in California. Least Bell's vireo historically bred in riparian woodlands from the interior of northern California (near Red Bluff, Tehama County) to northwestern Baja California, Mexico. In 1973, no least Bell's vireos were found during an extensive search of their formerly occupied habitat between Tehama County and San Joaquin County (Gaines 1974) and, by 1980, the species was extirpated from the entire Central Valley (U.S. Fish and Wildlife Service 1998). Its current breeding distribution is restricted to a few localities in southern California and northwestern Baja California, Mexico (Franzreb 1989). There are breeding records for the southern Owens Valley of Inyo County and it regularly breeds at the South Fork of the Kern River Preserve (Heindel pers. comm.).

Least Bell's vireo nests primarily in willow (*Salix* spp.), but also uses a variety of other shrub and tree species for nest placement. Foraging occurs in riparian and adjoining upland habitats. Quality habitat occurs within the NEMO Planning Area, along the Amargosa River in San Bernardino County. The reduction of least Bell's vireo numbers and distribution is associated with widespread loss of riparian habitats and brood parasitism by the brown-headed cowbird (*Molothrus ater*). Habitat degradation characterized by changes in predator-prey relationships, livestock grazing, agricultural use, dam construction, fragmentation, isolation, pollution, and human disturbance is associated with habitat loss (Kus 1998). About 76 percent of the U.S. population is found at just five localities (Federal Register 1992).

Since federal listing and follow-up restoration and management activities, the species has undergone a population increase almost as dramatic as its decline (U.S. Fish and Wildlife Service 1998). The current breeding population of the least Bell's vireo in California consists of approximately 500 pairs (Federal Register 1992). In addition to population increases, observations indicate that the species is undergoing a northward expansion (Draft Riparian Bird Conservation Plan 1998). Currently, least Bell's vireos are recolonizing areas unoccupied for decades and have the potential to reestablish breeding population in the central and northern portions of their historical range (U.S. Fish and Wildlife Service 1998).

3.2.8 SOUTHWESTERN WILLOW FLYCATCHER

The southwestern willow flycatcher (*Empidonax traillii extimus*) is a federally endangered species. The final ruling listing the southwestern flycatcher as endangered was published in February 1995, although designation of critical habitat was postponed (USFWS 1995). It is currently known to breed at only about 75 sites in riparian areas throughout the southwest. The known breeding population is estimated at between 300 and 500 pairs. The southwestern willow flycatcher nests only in dense riparian vegetation associated with streams, rivers, lakes, springs, and other watercourses and wetlands.

The most significant historical factor in the decline of the southwestern willow flycatcher is the extensive loss, fragmentation, and modification of riparian breeding habitat. Large-scale losses of wetlands have occurred, particularly the cottonwood-willow riparian habitat of the southwestern willow flycatcher (Phillips et al. 1964, Johnson and Haight 1984, Katibah 1984, Johnson et al. 1987, Unitt 1987, General Accounting Office 1988, Dahl 1990, State of Arizona 1990). Habitat changes have occurred and continue to occur because of urban, recreational, and agricultural development, water diversion and impoundment, channelization, livestock grazing, and replacement of native habitats by introduced plant species. Fire danger in riparian systems may increase with the conversion from native to exotic vegetation (e.g. saltcedar), diversions or reductions of surface water and drawdown of local water tables.

Brood parasitism by the brown-headed cowbird is another significant and widespread threat to the southwestern willow flycatcher. Once a southwestern willow flycatcher nest is parasitized, it has almost no chance of producing flycatcher young, which may result only in the rearing of cowbird chicks (National Park Service Technical Report 1997). At the South Fork Kern River Preserve, an average of 63.5% of nests were parasitized from 1989 to 1992, with a range from 50% in 1989 to 80% in 1991 (Craig and Williams 1998). Trapping of brown-headed cowbirds has proven to be successful in decreasing the rate of parasitism and is a valuable tool that can be used as riparian habitat restoration proceeds.

3.2.9 SWAINSON'S HAWK

The Swainson's hawk is a California threatened species. Swainson's hawks were considered to be a common to abundant breeding species in California (Sharp 1902) at the end of the 19th century. By the early 1940s breeding population declines were being documented (Grinnell and Miller 1944). Bloom (1980) conducted the first statewide survey of Swainson's hawks in California in 1979 and estimated 110 nesting pairs and a total population of 375 pairs in California. These data revealed that the remaining population centers were in the Great Basin in the extreme northeastern portion of the state and in the Central Valley, and that the species was nearly extirpated throughout large parts of its former range. The declines were greatest in coastal southern California where Sharp (1902) had classified the species as abundant. In 1988, the total statewide population was estimated to be 550 breeding pairs. Additional surveys done in the 1990s indicate that the total statewide population is 500-1,000 breeding pairs. The difference in

numbers of breeding pairs between 1980 and the 1990s is thought to be the result of increased survey efforts and not a population increase.

The decline of Swainson's hawks in California has been attributed to mortality during migration and on the wintering grounds in South America; poisoning by toxic chemicals including pesticides in South America, eggshell thinning, habitat loss on wintering grounds, disturbance on breeding grounds, loss or degradation of habitat on the breeding grounds, and increased competition with other species. Habitat degradation could occur through a variety of mechanisms including but not limited to fires which eliminate nesting opportunities in Joshua trees and riparian trees, off-highway vehicle use which leads to a decrease in prey populations or affects the long-term recruitment of new nest trees, alteration of normal stream and wash hydrology leading to the loss of riparian habitat, lowering of water tables that leads to the loss of nesting habitat or contributes to a decline in prey availability, and shooting, which historically has contributed to the loss of birds (England 1998). Bloom (1980) estimated the historical population in the Mojave and Colorado Deserts at 270-1,080 pairs. Declines of the hawk in the Mojave Desert, according to Bloom, could be directly related to the decrease in the range of the Joshua tree. As the tree's range decreased (especially in the Antelope Valley), Swainson's hawk numbers probably decreased proportionately.

Historically, the Swainson's hawk breeding range in California included the Great Basin and Modoc Plateau, the Sacramento and San Joaquin Valleys, the coastline in Marin, Monterey, Ventura, Los Angeles, and San Diego counties, and a few scattered sites in the Colorado and Mojave deserts (Bloom 1980). Swainson's hawks nest almost exclusively in trees, but in a few instances have been recorded nesting on cliffs, coulees, human-built structures, and the ground, but these types of sites are rarely used (England et al. 1997). A survey of nesting birds in 1979 revealed that Swainson's hawks nested almost exclusively in large, sparsely vegetated flatlands characterized by valleys, plateaus, broad floodplains, and large expanses of desert.

Typical habitat for the Swainson's hawk is open desert, grassland, or cropland containing scattered, large trees or small groves where they prey upon a variety of mammals including bats, birds, lizards, snakes, amphibians, and insects. The specific prey species vary from location to location, but are generally dominated by ground squirrels, jackrabbits, cottontails, mice, gophers, and birds, such as mourning dove, during the breeding season. Insects are an important part of the diet outside of the breeding season, and Swainson's hawks consume dragonflies, crickets, and grasshoppers.

3.2.10 WESTERN YELLOW-BILLED CUCKOO

The yellow-billed cuckoo (*Coccyzus americanus occidentalis*) is a California endangered species. A statewide survey of yellow-billed cuckoos in California conducted during 1986 and 1987 found a total of 30-33 pairs and 31 unmated males at nine localities (Laymon and Halterman 1989). More recent surveys on the Sacramento River from 1988-1990 have shown a fluctuating population of 23-35 pairs depending on the year (Halterman 1991). Continuous surveys on the South Fork of the Kern River from 1985-1996 have shown a population that varied from a low of 2 pairs in 1990 to a high of 24 pairs in 1992 (Laymon et al. 1997). These two sites are

the only localities in California that sustain breeding populations of yellow-billed cuckoos. Small and unstable breeding populations are found along the Amargosa River near Tecopa and at several locations in the Owens Valley.

Yellow-billed cuckoos have one of the most restrictive suites of macro-habitat requirements of any bird species. They inhabit extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, and which abut on slow-moving watercourses, backwaters, or seeps. Willow is almost always a dominant component of the vegetation. They may inhabit mesquite thickets when willow is absent. Nesting typically occurs in sites with at least some willow, dense low-level or understory foliage, high humidity, and wooded foraging spaces in excess of 300 feet in width and 25 acres in area. Nesting sites with less than 40% canopy closure are unsuitable, those with greater than 65% are optimal (Laymon 1998). In California, they are confined during the breeding season to cottonwood-willow riparian habitat (Laymon 1998). Cuckoos have large home ranges, often exceeding 50 acres and sometimes approaching 100 acres in extent (Laymon and Halterman 1985).

The cause of decline of yellow-billed cuckoos both historically and recently is primarily from habitat loss on the breeding grounds in California. Habitat loss has occurred due to clearing for agriculture, clearing for flood control, flooding behind dams, withdrawal of ground water causing a lowering of the water table, clearing for urban and suburban development, invasion by exotic vegetation (black walnut [*Juglans californica*], edible fig [*Ficus carica*], salt cedar [*tamarisk sp.*], giant reed [*Arundo donax*]), pesticides (especially larvacides used in mosquito control), and long-term (greater than 100 years) intensive year-round grazing (Laymon 1998). Important temporary losses of riparian habitat are caused by firewood cutting and wildfire.

3.3 SOIL, WATER AND AIR RESOURCES

3.3.1 SOIL

The soils in the NEMO Planning Area are as varied as the land forms, microclimates and geology of the region. Soil surveys have been conducted in the Saline Valley area and the Kingston-Amargosa areas, but most of the soils in the NEMO Planning Area have not been formally surveyed. Most soils in the area are poorly developed and are generally well drained and coarse textured. Some portions of the Planning Area are internally drained resulting in a number of small playas with surface clays, surface physical soil crusts and increased salinity. The soil depth ranges from deeper alluvial materials to very shallow or non-existent depth over the rocky substrate. The soils are susceptible to accelerated erosion from wind and water especially when the surface has been disturbed. Portions of the soils have been subject to periodic disturbance due to grazing, mining, agriculture, OHV activity and other resource uses.

The California Desert Conservation Area plan classified the desert soils into sensitivity classes. These classes were based on surface texture, slope, rocks topography and other factors, which affect soil sensitivity to surface disturbance. The CDCA Plan classified a

majority of the soils in the northwest portion of the NEMO Planning Area in the high sensitivity class with most of the remaining soils in the medium class. Soils in the eastern and southeastern portions of the NEMO Planning Area are nearly evenly split between a high and medium classification. There are small sections of low sensitivity soils spread through the entire Planning Area.

3.3.2 WATER

Groundwater and surface water sources occur throughout the NEMO Planning Area. A large number of surface water sources exist within the northwestern portion of the Planning Area where most mountain ranges reach over 10,000 feet elevation and include numerous streams, springs, seeps, and a lake. Perennial streams exist in Middle Park, Pleasant, Happy, Surprise, Hall and Jail Canyons in the Panamint mountains, Water, Knight, Revenue, Snow and Thompson Canyons in the Argus Range, Daisy, Craig, Hunter, Beverage, Keynot, Mc Elvoy, Pat Keys and Willow Creek Canyons in the Inyo Mountains and Weyman, Cottonwood, Toler, McAfee and Perry Akin Canyons in the White Mountains. Weyman, Cottonwood, McAfee and Perry Akin Creeks all support trout fisheries and are diverted near their mouth for irrigation. Several large springs occur on private land in Deep Springs Valley. Corral Spring has a very large flow and is one of the major sources of water for Deep Springs Lake, which covers nearly 2,000 acres and includes an associated wetland, which is habitat for the black toad. The eastern and southeastern portion of the NEMO Planning Area also has a number of significant water sources including the Amargosa River, Willow Creek, Grimshaw Lake, Salt Creek and Tecopa Hot Springs.

The Amargosa River is the focal hydrologic system of the Northern and Eastern Mojave Desert (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins. One of only two large rivers in the Mojave Desert, the free-flowing Amargosa River includes perennial and ephemeral surface flows as well as subterranean flows.

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. Major river tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the south. Approximately 94% of the lands along the river in California are in Federal ownership. Portions of this river have been determined eligible for Wild and Scenic Rivers System suitability (see Appendix O).

Groundwater occurs in nearly all of the valley basins in the Planning Area. These ground waters vary greatly in depth, quantity and quality. A portion of this water comes from current recharge from the surrounding mountains and old water deposited during the fluvial lake period (10,000 years ago). For many of the basins the current recharge rate is low. Groundwater withdrawals from these basins can result in large draw-downs in the basins. Portions of the Amargosa Valley are underlain by a regional carbonate rock

aquifer. This large aquifer transports large volumes of water under mountain ranges in the area and collects water from many widespread watersheds. Major springs occur along this carbonate aquifer system including Ash Meadows Springs which annually discharges 17,000 acre-feet of water and the Furnace Creek springs which produce 5 cubic feet per second (3,500 acre-feet per year). Discharges from this carbonate rock aquifer are the source of water for Devils Hole and the Lower Carson Slough. Water withdrawals from the Amargosa Valley Death Valley Junction area could impact the flows at Ash Meadows and Furnace Creek. Currently, commercial ground water pumping is occurring in Fish Lake Valley, Ash Meadows, Pahrump Valley and Ivanpah Valley.

The unified watershed assessment conducted in preparation of the Clean Water Action Plan (1998) classified the watersheds into one of four categories. These four are:

- Category I - Watersheds that are candidates for increased restoration activities due to impaired water quality.
- Category II- Watersheds with good water quality that, through regular program activities can be sustained and improved.
- Category III- Watersheds with pristine or sensitive areas on Federal, State or tribal lands that need protection.
- Category IV- Watersheds where more information is needed.

Within the NEMO Planning Area, the watersheds were classified as follows:

| | |
|-------------------------------------|---|
| Category I Watersheds (Impaired) | Eureka-Saline Valleys Upper Amargosa Mojave (upper) |
| Category III Watersheds | Fish Lake-Soda Springs Valleys Ivanpah-Pahrump Valleys Death Valley-Central and Lower Amargosa Panamint Valley |

3.3.3 AIR QUALITY

Much of the time, air quality throughout the NEMO plan area is good. There are, however, times that localized areas have not met national and State air quality standards due to locally generated and/or transported in pollutants. This has resulted in several areas within the NEMO Planning Area being classified as Federal and/or state nonattainment areas, including:

- portions of the NEMO Planning Area fall within the Federal Owens Valley PM₁₀ nonattainment area. The Owen Valley Area is one of six serious PM₁₀ nonattainment areas in the nation;
- portions of the Planning Area are within the Federal Mojave Desert ozone nonattainment area which covers northeastern San Bernardino County; and
- portions of the Planning Area that lie within San Bernardino County are within the Federal San Bernardino County PM₁₀ Nonattainment Area.

Air districts are required to develop a plan with an implementation schedule for both State and Federal non-attainment areas. These plans identify and quantify sources of emissions and presents a comprehensive strategy to control and reduce locally generated emissions. The management and enforcement of the Clean Air Act's air quality standards in the NEMO area is conducted by two entities, the Mojave Desert Air Quality Management District and the Great Basin Unified Air Pollution control District. The former includes the desert portion of San Bernardino County and the Palo Verde Valley portion of Riverside County (within the Mojave Desert Air Basin) and the latter includes Inyo and Mono Counties (within the Great Basin Valley Air Basin).

3.4 CULTURAL AND NATIVE AMERICAN RESOURCES

Numerous sites within the boundaries of the Planning Area have been listed on or determined eligible for inclusion on the National Register of Historic Places (NRHP). In addition several sites are listed as California Historic Landmarks (CHL) and California Points of Historic Interest (CPHI). Sites listed on the CHL and CPHI may or may not have been evaluated for NRHP; several were identified as historic landmarks as a consequence of eligibility evaluations. Several archaeological sites have been determined eligible for inclusion on the National Register of Historic Places due to their potential to yield information important to prehistory and history. The locations of these sites are confidential. Old Traction Road and 20-Mule Team Road also cross the Planning Area and are potentially eligible for inclusion on the NRHP. Both sites were identified as sites of concern during NEMO public scoping.

Ethnographic studies (Bob Laidlaw et al.) of tribal distributions were completed for all of CDCA as part of CDCA Plan. The NEMO cultural analysis tiers off of these CDCA Plan studies. At European contact, circa 1776 with the crossing of the Mojave Desert by the Spanish Franciscan priest Francisco Garces, the area was inhabited by various Yuman and Shoshonean peoples whose cultures were characterized by complex adaptations to the arid environment. These include the Serrano Indians who occupied the Mojave River Valley and San Bernardino Mountains during the Late Prehistoric until the Historic Era, the Mohave who occupied the Colorado River Valley and portions of the Mojave Desert adjacent to the river, Western Shoshone(Panamint/Koso and Timbisha Band), Kawaiisu and Southern Piute peoples who occupied portions of the Colorado River Valley, lands adjacent to Death Valley, Fort Irwin and Chemehuevi who occupied the Mojave Desert from the Colorado River to lands within the Mojave Preserve. All of the desert adapted peoples evidently practiced a hunting and gathering subsistence strategy, making the seasonal round, exploiting available plants, grass seed resources, acorns, and available mammals. They interacted with their neighbors and some type of trade existed, as evidenced by marine shell beads and obsidian utilized for lithic artifacts. In addition, the Mohave practiced limited agricultural in the flood plains of the Colorado River.

IDENTIFIED SIGNIFICANT SITES

| Property Name | Listed | Eligible | CHL | CPHI | Notes |
|---|--------|----------|-----|------|----------------------------------|
| CA-SBr-3186 (Baker vicinity) | X | | | | (AKA Aboriginal Rock Cairn Site) |
| Paiute Pass Archaeological District | X | | | | Mojave Preserve |
| Cerro Gordo National Historic District | X | | | | |
| Death Valley Junction Historic District | X | | | | Private land |
| National Old Trails Road (CA-SBr-2910H) | | X | | | (AKA Route 66) |
| Mormon Road/Trail (Ca-SBr-4411H) | | X | | | |
| AT & SF Railroad (CA-SBr-6693) | | X | | | |
| Old Spanish Trail (CA-SBr-4272H) | | X | | | |
| Tonapah & Tidewater Railroad (CA-INY-4772H) | | X | | | (AKA CA-SBr-2340H) |
| Hoover Dam to San Bernardino Transmission Line | | X | | | (CA-PSBr-38H) |
| Boulder Transmission Lines 1, 2, 3 | | X | | | (CA-SBr-7694H) |
| Mormon Road Monument (Ca-SBr-4411H) | | | X | | |
| Harry Wade Exit route | | | X | | |
| Searles Lake Borax Discovery Site | | | X | | |
| National Old Trails Monument | | | X | | |
| Von Schmidt State Boundary | | | X | | |
| Mojave Road (CA-SBr-3033H) | | | X | | |
| California/Arizona Desert Training Center Maneuver Area | | | X | | |
| Camp Ibis (Desert Training Center) | | | X | | (Patton Camps) |
| Lanfair | | | | X | |

3.5 WILD HORSE AND BURRO

Currently there are three Herd Management Areas (HMAs), that are managed for wild horses covering 2,262,771 acres and five HMAs managed for burros, covering 827,575 acres. (See Chapter 7, Figure 8a) There are two Herd Areas (HAs) in the NEMO Planning Area within the USFWS designated recovery units (Dead and Clark Mountain Herd Areas). The Dead Mountain HA is in the proposed Piute-Fenner unit of the identified Desert Tortoise Wildlife Management Area. The CDCA Plan set a management prescription of zero (0) burros for this HA. The current population is estimated at 16 burros. The western portion of the Clark Mountain HA was designated as an HMA in the CDCA Plan. This HMA has a Herd Concentration Area (#27) located within the boundaries of the proposed Shadow Valley ACEC. It has an established AML of 44 burros (371 AUMs) and management is set forth in the East Mojave HMA Plan.

Herd Areas become Herd Management Areas (HMAs) when the decision has been made that wild horses and/or burros can be managed for the long term within the habitat. The decision that a Herd Area should receive long-term wild horse and burro management is accomplished through the land use planning process by designating the area as a HMA. Upon designation as a HMA, wild horses and burros shall be managed as an integral component of the public lands on the basis of multiple use and in a manner that maintains an ecological balance.

The Clark Mountain HMA is mostly within the Valley Wells Cattle Grazing Allotment. This allotment comprises 223,007 acres of public land with a carrying capacity from the CDCA Plan adjusted for the loss of NPS acreage of 5,011 AUMs, 4,640 of which are

currently allocated to cattle use. The rangeland health assessment performed in 1999 for the Valley Wells Allotment determined that continued cattle use and heavy use by burros would degrade the quality of vegetation to the point that the Native Species standard may fail to be attained in the near future. It concluded that the grazing was occurring above the proper use level for key plant species, which was attributed to an overpopulation of burros. In June 1999, 156 burros were removed from the Clark Mountain HMA, leaving an estimated population of 140 burros. The gathered burros are placed in the BLM's National Wild Horse and Burro Adoption Program.

HMAs cover only BLM managed lands, but horses and burros wander across jurisdictional boundaries. NPS-managed, other Federal and private lands may have wild horses and burros on them. The current management situation is summarized in Appendix K, with existing censuses of animals and target population levels. The Appendix does not include four formerly BLM-administered HMAs, which are now under NPS jurisdiction (listed in Appendix M, summarizing changes made by the CDPA).

3.6 CATTLE GRAZING (and Allotments)

There are 17 cattle allotments (a designated area suitable for grazing) within the NEMO Planning Area. There are eight allotments located within the Ridgecrest Resource Area, nine are located within the Needles Resource Area, and one is located within the Barstow Resource Area. With the passage of the CDPA, three allotments have portions located in Death Valley National Park, and eight allotments have portions located in the Mojave National Preserve. Colton Hills, Round Valley, and Gold Valley Allotments were completely administered by the BLM, but after enactment of CDPA the NPS solely administers these allotments in the Mojave National Preserve. On March 1, 2000 the Granite Mountain Allotment and on 13 November 2000, the Lanfair Valley Allotment was terminated by amendment to the CDCA Plan.

The allotments located within the Planning Area are classified as Section 15 grazing leases in accordance with the Taylor Grazing Act. Allotments with perennial forage have an established limit of forage based on the quality and quantity of perennial plants, stated in animal unit months (AUMs) for a defined period of grazing use. An AUM is a measure of perennial or ephemeral feed that will support a cow and its calf or a bull for one month. Perennial forage use is typically authorized to be consumed at the same level from year to year unless forage production does not meet seasonal norms. In contrast, grazing use in allotments with ephemeral forage do not have an established level or specified period of use. Instead the amount and length of grazing use is determined just prior to authorizing the grazing.

Typically, grazing is authorized by the BLM in the Planning Area by lease for a period of 10 years. A shorter period of time is sometimes issued for special circumstances, such as to accommodate a shorter term lease of the base property or when the Authorized Officer determines that a shorter term authorization is in the best interest of range management. Additionally, non-renewable grazing authorizations may be issued for special short-term

needs such as trailing, or when there is short-term surplus forage available for grazing. All leases are subject to modifications and to annual adjustments. These are implemented through consultation between the lessee and the BLM.

The lease identifies the number, kind and/or type of livestock that may graze the allotment, and the grazing period (usually with specific beginning and ending dates). In addition, many leases also require adherence to prescribed grazing prescriptions in the form of grazing systems such as deferred, deferred-rotation, or rest-rotation. Other authorizations may have conditions pertaining to turn-out dates based on vegetation conditions. Some leases have specific grazing utilization standards and other specified conditions to protect site-specific areas, such as riparian areas, wildlife habitat, special status plant populations, etc. Usually these conditions have been developed in consultation and cooperation between BLM and the livestock operator in the form of an allotment management plan or other planning effort.

Often there are occasions when the lessee elects to graze less than the full amount of grazing authorized for the grazing season. Sometimes this is due to environmentally related factors such as droughts or fires, and in other cases it may be to accommodate the livestock operator's needs to adjust livestock numbers for marketing or livestock husbandry purposes. Normally the BLM will authorize the requested amount of non-use on a short-term basis. In some situations the BLM may temporarily authorize another qualified applicant to graze the amount of authorized non-use in an allotment, but this is seldom done.

About 60 percent of the allotments have Allotment Management Plans (AMP). Most of the AMPs are in the Needles Resource Area. Nine of the eighteen allotments are jointly-administered by BLM and NPS, including seven in the Mojave National Preserve and two in Death Valley National Park. The following is a general description for the eighteen allotments in the Planning Area. Refer to Table 3-2 and Appendix P for resource related information.

Current Grazing Leases in the NEMO Planning Area

Clark Mountain #9003: The BLM portion of Clark Mountain Allotment is 97,560 acres in size and constitutes 80% of the total allotment. The remaining acreage (20%) is within the Mojave National Preserve (MNP) and is administered by the National Park Service (NPS). The allotment can be grazed all year-long with 132 cattle, however about 25 cattle have been using the allotment for the past several years. The Allotment Management Plan (AMP) for Clark Mountain Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment is within Category I desert tortoise habitat and portions of the Stateline Wilderness, the Mesquite Wilderness and Clark Mountain HMA.

Crescent Peak #9013: The BLM portion of Crescent Peak Allotment is 6,719 acres and comprises 23% of the allotment. The remaining acreage is within the MNP and is managed by NPS. The allotment can be grazed all year-long with 30 cattle, however no

grazing use has occurred for several years. The AMP for the Crescent Peak Allotment was completed in 1986. Rangeland health field assessments, for this allotment, were completed by April 1999. There is no tortoise habitat in the BLM portion of the allotment.

Deep Springs #5062: This allotment is 43,932 acres in size. There are 167 cattle grazing from December 1 through February 28, and 250 cattle grazing from March 1 through May 31. There is no AMP for this allotment. An interdisciplinary team of representatives from the BLM, Forest Service, Deep Springs College (the lessee), and various other interest groups are working on development of the AMP. Until plan completion, the team decides on livestock stocking levels, and rotation of livestock within BLM and Forest Service pastures.

Eureka Valley #5001: This 17,000-acre ephemeral allotment has received infrequent grazing for the last ten years. Grazing use is managed under ephemeral guidelines in the CDCA Plan. An interdisciplinary team determines turnout for this allotment.

Fish Lake Valley #5090: Grazing use occurs from September 1 to October 1 with 93 cattle. There is no AMP for this allotment. The BLM Tonopah, Nevada Field Office administers this allotment for the Ridgecrest Field Office.

Horse Thief Springs #9007: This allotment can be grazed year-long with 202 cattle. However, for the past several years grazing use has been a third to none of the permitted use. The AMP for the Horse Thief Springs Allotment was completed in 1985. Rangeland health field assessments for this allotment were completed by April 1999. The allotment is within Category III desert tortoise habitat and portions of the Kingston Range Wilderness, the North Mesquite Mountains Wilderness, the South Nopah Range Wilderness, the Pahrump Valley Wilderness, and the Nopah Range Wilderness.

Hunter Mountain # 5013: This allotment is located on BLM-managed land and in Death Valley National Park. The BLM portion is 53,920 acres and there are no AUMs allocated to the BLM portion. In the past, lack of water prevented grazing of the area now administered by BLM. Water can be hauled to approved locations, and future production studies will be conducted to establish carrying capacity for this allotment. The AMP for the Hunter Mountain Allotment was completed in 1989.

Jean Lake #9017: The allotment can be grazed with 25 cattle and this use is limited to the winter months by mitigation measures for critical desert tortoise habitat. However, grazing has not occurred for many years. There is no AMP for the Jean Lake Allotment. Rangeland health field assessments for this allotment were completed by April 1999.

Kessler Springs #9008: The Kessler Springs Allotment is 14,161 acres in size. The portion managed by NPS in the MNP was canceled on 29 August 2000. The allotment can be grazed year-long with 33 cattle. Grazing is based on forage condition and management needs for the allotment. The AMP for the Kessler Springs Allotment was completed in 1982. Rangeland health field assessments for this allotment were

completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.

Last Chance #5062: With the passage of the CDPA a portion of this allotment is now located within Death Valley National Park. The BLM allotment is 35,532 acres and 1,639 AUMs. There is no AMP for this allotment. Allotment inspections and monitoring key forage plant species utilization levels are used to determine changes in livestock stocking levels.

Oasis Ranch #5059: This allotment is approximately 22,968 acres. The authorized use is 656 AUMs or 215 cattle for any three-month period between April 1 and September 30. There is no AMP for this allotment. This allotment is managed with a companion allotment in Nevada. A deferred grazing management system has been implemented.

Pahrump Valley #8000: This allotment is 26,952 acres. The authorized use is 353 AUMs, or a maximum of 175 head of cattle from February 15 to February 28, and 175 head of cattle from March 1 to April 15. There is no AMP for this allotment. Approximately 90% of the allotment is located within the Nopah Range Wilderness. The allotment is situated in desert tortoise habitat, but outside critical habitat. Allotment inspection and monitoring of key plant species utilization levels are used to determine any changes in livestock stocking rates.

Piute Valley #9004: The Piute Valley Allotment is 20,145 acres with 42% of the allotment managed by the BLM. The remaining acreage (58%) is within the MNP and administered by NPS. The authorized use for ephemeral grazing activities is 73 AUMs or 33 cattle per year. The AMP for the Piute Valley Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.

South Oasis #5063: This allotment is 15,173 acres. The authorized use is 477 AUMs or 59 head of cattle from April 1 through August 31. There is an AMP for this allotment. A deferred grazing management system has been implemented.

Valley View #9000: The BLM Valley View allotment is 31,575 acres and covers 10% of the total allotment. The remaining 90% is within the MNP and managed by the NPS. The authorized use is 933 AUMs or 71 cattle per year for all year long. The AMP for the Valley View Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS at the lower elevations.

Valley Wells #9009: The BLM Valley Wells Allotment is 223,007 acres and covers 86% of the total allotment. The remaining 14% is within the MNP and is managed by the NPS. The permitted use is 3,994 or 317 AUM's cattle per year from the first of March through the end of February. The AMP for the Valley View Allotment was completed in 1984. Rangeland health field assessments for this allotment were completed by April 1999. The allotment contains critical desert tortoise habitat designated by the USFWS.

Portions of the Hollow Hills Wilderness, the Kingston Range Wilderness, the Mesquite Mountains Wilderness, North Mesquite Mountains Wilderness, and the Clark Mountain HMA occur in the allotment.

White Wolf #5060: This allotment is approximately 13,733 acres. The authorized use is 307 AUMs or 55 head of cattle from September 15 through February 28. There is no AMP for this allotment. Allotment inspection and monitoring key forage plant species utilization levels are used to determine any changes in livestock stocking levels.

Range Improvements: In order to facilitate effective and economical grazing use, structural facilities and other range improvements are installed on the allotments. Some of these improvements, such as corrals and providing supplements, are needed to facilitate the handling of livestock. Other developments are primarily used to enhance or impede cattle movement or improve the condition of forage by installation of wells, pipelines, troughs, prescribed fires, fences, springs developments, and reservoirs. Developed water sources are used for livestock and wildlife. Many of these facilities have been installed under cooperative ventures between the lessee and BLM. Most improvements are installed and maintained exclusively by the rancher on private lands and as permitted by BLM on public lands.

Grazing Systems: Grazing systems (strategies, plans, etc.) are designed cooperatively between the lessee and the BLM to meet both the needs of the grazing operation and to protect or enhance some non-livestock related rangeland resources (e.g., riparian areas, T&E species). Systems may prescribe scheduled livestock movement, specific area of use, percentages of forage consumption, and special mitigation measures (e.g., 200 lbs./acre of ephemeral forage before turnout). The grazing system may become a term and condition for grazing use and would be briefly described in the grazing lease. All grazing use must conform to the grazing lease.

On most allotments where riparian areas exist, the riparian areas, whether lentic or lotic, normally constitute a very small proportion of the allotment area and are often located in a fragmented pattern throughout each allotment. Although these areas constitute a very small amount of the overall forage available for livestock in each allotment, they are very attractive areas to livestock, because of their proximity to water, shade, and vegetation that remains succulent much longer than the adjacent upland vegetation. Consequently, livestock tend to congregate in these areas and can quickly overuse the riparian vegetation. The use of riparian-wetland areas by other ungulates, in conjunction with livestock, makes the problems all the more complex. Wild horses and burros, in particular, present a difficult management problem. These animals also find most riparian-wetland areas attractive and may overuse the vegetation even in the absence of livestock.

Monitoring: Monitoring is the orderly, repeated collection, analysis, and evaluation of resource data to ascertain progress in meeting resource management objectives (this is based on BLM Manual 6600). The repetition of measurements over time for the purpose

of detecting change distinguishes monitoring from inventory and assessment. Additional discussion of monitoring can be found in Appendix E.

Since the early 1980's grazing allotments have been assigned to one of four categories, based upon current resource conditions and the potential for improvement. This categorization has served as a method for the BLM to determine which allotments should have the most management attention. Each allotment is to be reviewed periodically to determine if the categorization is still appropriate for the particular allotment based on monitoring or other information. If not, the Authorized Officer will reassign the allotment to the appropriate category. Table 3-2 shows the number of allotments and their current category.

Table 3-2: Allotment Resource Information

| Allotment Name | Forage Type ² | Acres | AUMs | MIC ³ | Assessment Complete ⁴ | Standards | |
|----------------------------|--------------------------|---------|-------|------------------|----------------------------------|-----------------------|-------|
| | | | | | | Fallback ⁵ | Alt 1 |
| Clark Mountain | Per/Eph | 97,560 | 1,303 | M | Yes | 2 | 2 |
| Crescent Peak | Per/Eph | 6,719 | 359 | C | Yes | 2 | 2 |
| Deep Springs | Perennial | 43,932 | 1,250 | M | Yes | 2 (3) | 2 (3) |
| Eureka Valley ² | Ephemeral | 17,000 | 0 | UC | No | 2 (3) | 2 (3) |
| Fish Lake Valley | Perennial | 577 | 52 | UC | No | 2 (3) | 2 (3) |
| Horsethief Springs | Per/Eph | 150,140 | 2,424 | M | No | 2 | 2 |
| Hunter Mountain | Perennial | 53,920 | 0 | I | Yes | 2 | 2 |
| Jean Lake | Per/Eph | 9,806 | 300 | C | Yes | 2 | 2 |
| Kessler Springs | Per/Eph | 14,161 | 481 | C | Yes | 2 | 2 |
| Last Chance | Perennial | 35,532 | 1,639 | I | Yes | 1 | 1 |
| Oasis Ranch | Perennial | 22,968 | 656 | I | Yes | 2 | 2 |
| Pahrump Valley | Per/Eph | 26,952 | 353 | M | No | 2 | 2 |
| Piute Valley | Ephemeral | 20,145 | 0 | M | Yes | 2 | 2 |
| South Oasis | Perennial | 15,173 | 477 | I | Yes | 4 | 4 |
| Valley View | Per/Eph | 31,575 | 849 | C | Yes | 2 | 2 |
| Valley Wells | Per/Eph | 223,007 | 4,272 | I | Yes | 2 | 2 |
| White Wolf | Perennial | 13,733 | 307 | M | No | 2 (3) | 2 (3) |

² Ephemeral and/or perennial are the two forage types that may be grazed on an allotment. Ephemeral forage primarily consists of ephemeral grasses and forbs. Perennial forage primarily consists of perennial grasses and shrubs.

³ There are four Selective Management Categories (M, I, C, UC) for grazing allotments. Category "M" allotments are in satisfactory resource condition and are producing near their potential under existing management strategies. There are little or no known resource use conflicts or controversies. Category "I" allotments generally have potential for increasing resource production or conditions, but are not producing at that potential. There could be conflicts or controversy involving resource conditions and uses, but there are realistic opportunities to enhance resource conditions. Category "C" allotments usually consist of relatively small acreage or parcels of public land. They are often, but not always, intermingled with larger amounts of non-federally owned lands. There are little or no known resource use conflicts or controversies. Usually opportunities for positive economic return from public investments are limited in these allotments.

⁴ This column indicates if a rangeland health assessment has been completed. Prior to determining achievement of standards, a field assessment of resource conditions is to be conducted by a team of field specialists.

⁵ The fallback column indicates the category based on results from the health assessment or an estimation of resource conditions if the assessment is not completed. Alternative 1 column estimates the category an allotment is expected to attain. The categories are; (1) areas where one or more standards are not being met, (2) areas where all standards are being met, (3) areas where the status of one or more standards is not known, and (4) areas where one or more standards are not being met, but factors other than cattle grazing is the primary contributor to the problem.

3.7 WILDERNESS

The NEMO Planning Area encompasses all or portions of 24 areas of designated wilderness totaling 1,225,000 acres, eight wilderness study areas totaling 200,000 acres and approximately 475,000 acres of "released lands". Wilderness and wilderness study areas are Congressionally-designated; "released lands" are those lands, within BLM's former wilderness study area boundaries, that Congress did not designate as wilderness or wilderness study area. The Planning Area has the highest concentration of designated wilderness of any region in the contiguous U.S.

BLM manages designated wilderness and wilderness study areas within the NEMO Planning Area consistent with the California Desert Protection Act (CDPA) of 1994, the administrative instruments (regulations, policies, etc.) from that statute, and other applicable Federal statutes. These instruments identified management direction for these lands with respect to specific uses that may occur within wilderness, as well as overall goals for lands designated. Of particular importance is the clear Congressional intent that wilderness designation not lead to the creation of "buffer zones" around wilderness boundaries. In and of themselves, non-wilderness activities visible or audible from wilderness are not to be precluded up to such boundaries.

Until released lands become classified again, BLM manages them consistent with the CDCA Plan and Amendment #53 of the 1982 Amendments to the CDCA. The CDCA Plan provides that such lands be returned to their original MUC designation unless they were recommended as wilderness by the BLM. Amendment #53 provides that recommended lands that were released from wilderness consideration be managed under Class "L" guidelines while they await formal classification. Classification decisions will be a determination made by BLM's District Manager, California Desert District, and must be pursued through plan amendment.

3.8 RECREATION RESOURCES AND ACTIVITIES

With expanded leisure time and growing affluence among the general population, the California Desert attracts millions of visitors annually. The desert provides the resources necessary for a variety of recreational experiences. These resources provide natural beauty, solitude, and freedom from the structure and regulations of urban areas. In all recreational opportunities, scenic values are often cited as an important resource to the participants' recreation experience. Virtually all recreation activities are dependent upon availability of access within the Planning Area. Most visitors travel on some previously used or marked motorized vehicle route. Recreation opportunities are grouped along a continuum of opportunities ranging from intensive vehicle-oriented activities at one end to resource-oriented activities at the other although there is often overlap between the two.

In most cases, public recreation use of BLM-administered lands is unsupervised and unorganized. BLM management of recreation activities, facilities and visitor contacts

center around OHV organized events, open areas, permitted commercial and organized activities (bighorn sheep hunts, trail rides, vision quests), and specific local wildlife conservation sites.

3.8.1 ORGANIZED COMPETITIVE VEHICLE EVENTS

BLM's Multiple-Use Classification (MUC) guidelines allow for competitive events in varying degrees on public lands within the Planning Area. The CDCA Plan as amended in 1982 designated one long-distance, point-to-point, competitive event Race Course in the Planning Area - the "Barstow-to-Vegas (B-to-V) Motorcycle Race." The B-to-V Race Course (Chapter 7, Figure 14) is roughly parallel to and north of I-15, utilizing a portion of the Boulder Utility Corridor for some of its length, and crosses critical tortoise habitat in northern Shadow Valley and northern Ivanpah Valley. This race course was designed to be offered for a specific kind of competitive event and not for access or casual use unless all or portions of them were "approved" in the routes of travel designation process. While the Barstow-to-Vegas Race Course is still in the CDCA Plan, it has not been used for a competitive event since 1989 due to the listing of the desert tortoise and issues of competitor and spectator compliance.

3.8.2 DUMONT DUNES OPEN AREA

The Dumont Dunes Recreation Area is located off Highway 127 north of Baker. The recreation area is surrounded by the Kingston Range Wilderness Area to the northeast, Death Valley National Park to the west, and the Salt Creek ACEC to the south. The main Dumont Dunes system, though relatively small, exhibits more types of dunes than any other dune system in the California Desert. This makes for excellent OHV recreational opportunities. Since the 1960s, Dumont Dunes has attracted people to the challenge of dune riding. The recreation area attracts over 60,000 visitors annually. Most visitors are from southern Nevada and the Los Angeles Basin.

Peak use periods in OHV open areas center around holiday weekends and the "spring break" at colleges. The net effect is a general use period from September through May of each year with the greatest use occurring in September-November and March-April. Use levels are lowest during the summer months, with the exception of holiday weekends. BLM active management presence is generally limited to peak use periods.

In the past, only one permitted event has been held at Dumont Dunes each year. The Las Vegas Jeep Club usually holds an annual event over the Presidents Day holiday weekend and operates within an area of the main dune system so as not to conflict with unrelated free-play activities. Recently, more commercial activities have been occurring at the dunes. This is most likely due to the increase in population in the Las Vegas area and proximity of the dunes to Nevada. These events include the Suzuki Quadzillathon, an ATV hill climb drag race, and the Dune Riders Sandboarding Competition. This latter event has been held at the dunes for the past three years.

3.8.3 DUAL-SPORTS EVENTS

Each year, the BLM receives requests for organized touring events. In response to this recreational demand, the BLM has consulted with the USFWS on an organized motorcycle/OHV touring program, or dual-sports events in desert tortoise habitat. To fall under the criteria of the relevant biological opinion (1-6-92-F-2; October 25, 1991) the event must be non-competitive in nature, occur between November 1 and March 1, occur entirely on existing open routes, and have no more than 500 participants. See Appendix A: Desert Tortoise Conservation Strategy (*Desert Tortoise Mitigation Measures*) for a list of standard mitigation measures for activities in desert tortoise habitat.

The Dual Sport Committee of District 37 of the American Motorcyclist Association applies on a regular basis for a recreation permit for use of existing routes of travel through lands managed by the BLM as part of their Dual Sport National Trail Ride. The LA-B-to-V Dual Sport Trail Ride has been a permitted event since 1984 and is limited to no more than 500 participants. The event involves motorcycle touring through the NEMO Planning Area.

3.8.4 VEHICLE TOURING

Casual-use vehicle touring is one of the most popular forms of recreation in the NEMO Planning Area. It is to some degree inseparable from the subject of destination recreation and, to a certain extent, from the subject of access where roads are common. Small informal group events occur on a regular basis throughout the Planning Area. Their use levels are currently unknown. They are generally related to rock and mineral collection, bird watching, equestrian use, OHV touring, wind-driven vehicle use, camping, and hiking.

3.8.5 HISTORICAL TRAIL TOURING

The off-road vehicle experience of traveling historical routes (Table 3-5) provides an educational and scenic experience of the natural wonders of a harsh desert region and the elements that the pioneers and founders of the historical route had to endure. The annual NORCO Trail Ride, an equestrian event, follows the historic Mojave Road. Other vehicular and equestrian use occurs, throughout the use season, on the historic Mojave Road, which passes through the Piute Valley in an east-west direction. Current visitor use levels are unknown. Indications from the condition of the road surface and infrequent observations by staff in the field is that there are about 2,000 visits per year to this segment of the Mojave Road. The East Mojave Heritage Trail was created as an extension of the Mojave Road Project for people who enjoy the backcountry and were looking for an educational experience. The trail is a 650 mile closed loop that makes use of existing roads and trails. With the passage of the California Desert Protection Act in 1994, much of the trail has been closed and only fragments remain.

Much of the Old Spanish Trail (Mormon Road) has been paved within the NEMO Planning Area. Tracks of the trail can still be seen at Emigrant Pass just off the Old Spanish Trail Highway as well as at Impassable Pass at the Alvord Mountains and points west. The route leading west from the highway is closed to motorized vehicle use to preserve what remains of the Old Spanish Trail. Variations of this route were traveled from 1829 to 1848, all being called the Spanish Trail, making it difficult to trace the "original" route. Most of the route in California is also known as the Mormon Road and became a commercial trade route between Los Angeles and Salt Lake City.

A portion of Route 66, "Old National Trails Highway," forms the southern boundary of the NEMO Planning Area. Route 66 was designated in 1926 and was the Main Street of America. It was the first national highway to connect Chicago with Los Angeles and was known as the "Mother Road." By 1985 however, the federal government deleted Route 66 from the Federal Highway System. Today, much of the route in the Mojave Desert has been replaced by Interstate 40. Route 66 still offers travelers an interesting touring opportunity. The recent revival of Route 66 and the fact that more than 80% of the original route is still open has lead to a substantial increase in travelers. In June of 1996, an estimated 3,000 Harley-Davidson bikers from around the world rode the road from Milwaukee to Ontario, making it the biggest event ever held on Route 66.

From 1905 to 1940, the Tonopah & Tidewater Railroad ran from Ludlow to Goldfield, Nevada. The line was very important for the mines, mining companies, residents and employees even though it never financially flourished. The T&T railroad line was the fastest, shortest, and cheapest route to Los Angeles and San Francisco for all the towns and mines along the Amargosa River and Death Valley regions. In order to preserve what remains of the original route, the remnant berm north from Sperry to its junction with the California/Nevada border has been closed to motorized vehicle use. However, there are adjacent roads along the berm providing vehicular access. The berm is open to motorized vehicles from Sperry south to Riggs.

Table 3-3: Major Historical Trails in the NEMO Planning Area

| Name | Miles | Miles On Public Land* | Resource Values |
|--------------------------------|-------|--|---|
| The Mojave Road | 130 | 11 miles. California border to east boundary of Mojave National Preserve (Fort Piute) | Scenic, historical, Native American values |
| East Mojave Heritage Trail | 650 | 38 miles open from Rocky Ridge to Fernner. 61 miles from Needles to Ivanpah. 97 miles from Ivanpah to Rocky Ridge. | Scenic, historical, Native American values. |
| Old Spanish Trail/ Mormon Road | 1200 | 50 miles. California border to Ft. Irwin Military boundary | Scenic, historical, Native American values |
| Route 66 | 2400 | 68 miles. Section between Ludlow and Kelbaker Road, and between Fenner and east NEMO boundary | Scenic, historical |
| Tonapah & Tidewater Railroad | 160 | 75 miles. 20 miles open from Riggs to Sperry | Scenic, historical |

*Miles on Public Land represent miles in the NEMO Planning Area only.

3.8.6 NATURE STUDY

Season of use for non-regulated activities (no legal limitation on season or permit required) is dependent upon the environmental conditions that either are being sought (wind-driven vehicle use, photography of wildflowers) or which limit the ability to enjoy

or engage in the activity (equestrian use, hiking, OHV touring). There is a close correlation between environmental quality and the quality of the recreation experience. Many activities, such as sightseeing, bird/wildlife viewing, photography, and hiking, depend on an unspoiled natural setting for a rewarding experience. Wilderness areas and ACECs provide good opportunities to study rare or endangered plant and wildlife species, geological and archeological features and desert ecology.

Table 3-6 shows BLM ACECs providing opportunity for nature study. These ACECs provide only a small portion of available resource-oriented recreation on public lands. Wilderness Areas also provide good opportunities for nature study.

Although all ACECs within the NEMO Planning Area are of importance, the Amargosa Canyon/Grimshaw Lake Natural Area ACEC is of significant value. Portions of the Amargosa River have been determined eligible for and are currently a potential candidate to the National Wild and Scenic Rivers System (See Appendix O), and both areas are currently designated as national Watchable Wildlife Sites. Both ACECs are listed on numerous maps as well as in several guidebooks and are near a “snowbird” winter use camping area located at Tecopa Hot Springs.

Table 3-4: Areas of Critical Environmental Concern (ACEC).

| Name/Field Office | Acres* | Resource Values |
|--------------------------------------|----------------|--|
| Amargosa River/ Grimshaw- Barstow | 9,206 1,096 | Wildlife habitat, vegetation, outstanding scenery, riparian |
| Bigelow Cholla RNA - Needles | 83 | Botanical values |
| Cerro Gordo - Ridgecrest | 9,073 | Prehistoric and historic values, vegetation |
| Clark Mountain - Needles | 4,234 | Prehistoric and Historic values, outstanding scenery, wildlife habitat |
| Dead Mountains - Needles | 28,559 | Native American values |
| Denning Spring - Barstow | 465 | Prehistoric and historic values |
| Greenwater Canyon - Barstow | 798 | Prehistoric and Native American values |
| Halloran Wash - Needles | 1,743 | Prehistoric values |
| Kingston Range - Barstow/ Needles | 19,620 | Wildlife habitat |
| Mesquite Hills/Crucero - Barstow | 5,002 | Prehistoric values |
| Mesquite Lake - Needles | 6,731 | Prehistoric values |
| Mt. Pass Dinosaur Trackway - Needles | 628 | Historic and paleontological values |
| Saline Valley - Ridgecrest | 1,389 | Wildlife habitat |
| Salt Creek (Dumont) Barstow | 2,205 | Wildlife habitat, prehistoric values |
| Surprise Canyon - Ridgecrest | 4,639 | Prehistoric and historic values, outstanding scenery, wildlife habitat, vegetation |
| White Mountain City - Ridgecrest | 32 | Cultural and historical values |

*Acres computed using Geographic Information System and include all public lands and private inholdings.

Petroglyphs, archeological sites, and many old mining towns still remain fairly pristine. Along major highways and backcountry roads, adits and mining shafts of the early prospectors' dot the mountain sides. Most trails (Table 3-7) that lead to historical places are grown over with vegetation, washed-out, or no longer open for vehicular travel in order to protect the resources. These remnant trails and canyon washes provide the opportunity for hikers to explore on foot.

Table 3-5: Historic Hiking Trails

| Name/Field Office | Miles | Resource Values |
|--------------------------------------|-------|---|
| Burgess Mine Trail - Ridgecrest | 7.0 | Historic mining district. Frenchy's cabin |
| Lonesome Miner Trail - Ridgecrest | 40.0 | Heart of historic trail system. Frenchy's cabin, millsite |
| Snowflake Mine Trail - Ridgecrest | 7.0 | Best known and most used trails in the Inyo Mountains. Historical features. |
| Amargosa Natural Area Trail- Barstow | 7.0 | Old Spanish Trail, T&T Railroad, historic mining workings and buildings |

3.8.7 CAMPING

Traditionally, most camping in the CDCA has been in established campground areas, but in the NEMO Planning Area camping mainly has been in the open desert where facilities are not available. Camping is generally associated with other recreation such as vehicle touring, nature study, rockhounding, and hunting.

3.8.8 LAKEBED ACTIVITIES

Dry lakebeds have often been ideal areas for a variety of recreational activities. They provide the basic requirements (open space, smooth surface) for land sailing, model rocket and airplane flying, hang gliding, and stargazing (particularly during celestial events such as the passing of comets).

Ivanpah Dry Lake is located on Interstate 15 at the California/Nevada border. Its close proximity to nearby hotels and restaurants/casinos makes this a favorite place for wind-power recreationists. Recreationists throughout the world travel to Ivanpah Dry Lake's expansive open spaces to play. International championship racing, long-distance archery, kite buggying, and land sailing are just some of the activities this dry lake is used for. The current world speed record for land sailing was set on the Ivanpah Dry Lakebed. The lakebed is closed to motorized vehicles without a permit.

Because of the increased amount of activity associated with the lakebed, the BLM identified Ivanpah as an area appropriate for volunteer efforts for development, improvement, or maintenance. The Friends of Ivanpah was recently established as a non-profit organization to help maintain the recreational and natural resources of the area.

The management objectives for each dry lake dictates the area's use and special monitoring requirements are needed to protect their resource values. The following table represents the significant dry lakebeds in the NEMO Planning Area and their recreational availability.

Table 3-6: Dry Lakes

| Dry Lakes | Access |
|--------------------|---|
| Broadwell Dry Lake | Open |
| Ivanpah Lake Dry | Open to non-motorized vehicle access only |
| Mesquite Dry Lake | Closed except for approved routes |

| | |
|-------------------|---|
| Salt Dry Lake | Closed except for approved routes |
| Silurian Dry Lake | Open |
| Silver Dry Lake | Closed, except for approved routes or by permit |

3.8.9 ROCKHOUNDING

The California Desert is heavily used by rockhounds from southern California and Nevada. Much of the collecting occurs on BLM lands, with the remainder occurring largely on privately owned land, where it is subject to landowner permission. Collecting is prohibited in the National Parks and on most State Park lands, and on “developed recreation sites and areas,” or where otherwise prohibited or posted.

Table 3-7: Rockhounding Sites

| Area/Field Office | Site | Materials | Location |
|------------------------------|---|--|---|
| EUREKA VALLEY Ridgecrest | Deep Springs Crystal Area (“Crystal Hill”) Sulphur Mine Eureka Valley | Smoky Quartz Crystals Variscite Obsidian | T7S, R36E, Sec. 9 (MDM) |
| DARWIN Ridgecrest | Cerro Gordo Mines Lee Mines | Numerous Minerals. Lazulite | T16S, R38E, Sec. 13 (MDM) T17S, R40E, Sec. 23 (MDM) |
| PANAMINT Ridgecrest | Surprise Canyon Panamint City Onyx Mine Ballarat | Lepidolite Idocrase, Diopside, Epidote, Wulfenite “Death Valley Onyx” (Travertine) “Ballarat Marble” (Onyx) | T21S, R45E (MDM) T21S, R45E, Sec. 11 (MDM) T22S, R43E, Sec. 6 (MDM) |
| BITTER-WATER Ridgecrest | Ryan Eagle Peak (Eagle Mountain) Old Ryan (Lila C. Mine) Zabriski Tecopa Pass Eclipse Mine Crystal Spring Mine | Colemanite Agate Jasper Fire Opal Petrified Wood Silver Quartz | T25N, R3E, Sec. 8 (SBM) T24N, R5E, Sec. 24 (SBM) T24N, R4E, Sec. 12 (SBM) T21N, R7E, Sec. 18 (SBM) T20N, R6E, Sec. 18 (SBM) T20N, R9E, Sec. 25 (SBM) |
| OWLSHEAD/AMARGOSA Barstow | Sperry Wash | Palm Fiber, Palm Root and Limb Sections, Wood | |
| KINGSTON Barstow/Needles | Kingston Range (Horsethief Springs) Shadow Mountain Toltec Mines (Turquoise Mountain) Mohawk Mine Halloran Spring | Amethyst Azurite Turquoise Cerussite, Galena, Sphalerite, Smithsonite Azurite | T19N, R10E, Sec. 3 (SBM) T17N, R11E, Sec. 5 (SBM) T16N, R10E (SBM) T15N, R10E, Sec. 14 (SBM) |
| MOJAVE Barstow | Ash Hill Black Ridge Bagdad Obsidianite Field | Flower Agate, Jasper, Chalcedony, Sard Chalcedony Roses, Jasper, Onyx, Perlite, Chrysocolla Obsidianite | T7N, R9E (SBM) T6N, R11E, Sec. 9 (SBM) |

Few, if any, direct conflicts between rockhounding and other land uses appear to exist. Most rockhounds prefer areas that are accessible by vehicle on the existing network of roads and trails. Table 3-9 lists the areas where minerals and rocks have historically been collected in the Planning Area. It does not include wilderness areas that are no longer available by vehicle.

3.8.10 SHOOTING AND HUNTING

The public lands administered by the BLM in the California Desert have always been important to shooting and hunting, and recreational shooting or “plinking” continues to be a popular activity in the desert. The wide-open and seldom visited areas provide an appropriate place for this activity. Residents from Southern California and Las Vegas urban areas often visit the NEMO Planning Area for target shooting, and visitors often bring firearms with them to partake in this activity.

The shooting or discharge of firearms is generally permitted on public lands except in specified areas (e.g., OHV Open areas), including wilderness in the NEMO Planning Area, as long as State and local laws permit such activity. These activities are regulated in order to minimize conflicts and resource impacts.

The California Department of Fish and Game regulates all hunting in the desert. Hunting peaks during the upland gamebird season but occurs at a much lower level at other times. During hunting season, there is an increase in use of motorized vehicles throughout the Planning Area.

3.9 VEHICLE ACCESS

One of the primary issues behind preparation of the CDCA Plan was access to and use of the resources of the California Desert. Access to desert resources by the public occurs for many reasons such as economic, recreation, or transportation purposes. Some access involves the use of major roads, maintained gravel and dirt roads, unmaintained dirt roads, trails and accessible desert washes.

Primary east-west access is provided by portions of National Trails Highway (Route 66) and I-40 on the southern boundary of the planning area, and I-15 through the southern third of the planning area. The major east-west access through the central portion of the planning area provides visitors access to Death Valley National Park. It consists of SH 178 which connects the stateline, west through the Tecopa/Shoshone area with SH 190; and SH 190 itself, which runs west from SH 127 through Death Valley Junction and the Furnace Creek area within Death Valley National Park, to Lone Pine just west of the planning area on US 395. Primary north-south access is provided by: (1) US 95 which provides access to the southeastern portion of the planning area, (2) SR 127, which spans the central third of the planning area from Baker on I-15 northward to the stateline north of Death Valley Junction, and (3) SR 168 which provides access to the northernmost reaches of the planning area.

The desert topography and geomorphic features present in the northern part of the NEMO Planning Area limits, and sometimes prevents cross-country access. In a few places occasional rains and flash floods make travel on vehicle access routes impassable. Physical limitation (slope aspects, etc.) often provides little flexibility of alternative access to desert resources. Access may involve a single road into an area, while other areas provide several options for the management of a route network.

The desert topography and geomorphic features present in the southern part of the NEMO Planning Area are relatively different, represented by broader valleys and more

gently sloping mountains. This type of desert terrain provides increased opportunities for motorized vehicle access. This results in additional management pressures when attempting to strike an appropriate land management balance between access to and use of the resources of the California Desert.

In addition, much of the southern portion of the Planning Area is designated critical habitat for desert tortoise. Land management planning, goals, objectives and implementation actions must be consistent with the recovery goals developed for the desert tortoise.

3.10 MINERALS AND MINING

The Southern California region, including portions of the Mojave Desert, is one of the most highly mineralized areas in the United States. This is due to the variety of geologic terrain exposed in the many mountain ranges and the depositional environments of the intervening basins. A detailed discussion of the geology and mineral resources of the area is contained in Appendix G of the CDCA Plan. The NEMO Planning Area is situated along the northeastern margin of this mineralized region and contains many known mineral deposits and potential for the discovery of additional mineral resources as shown on Figure 3a (Chapter 7). Passage of the CDPA has withdrawn many of the deposits and mineral potential areas from mineral entry and development in designated wilderness areas, except for valid existing rights. Mineral development is encouraged on public lands outside of specially designated areas and managed under several laws by three categories: locateable, leaseable, and salable. Current management practices are described in Appendix K.

Mineral commodities mined currently or in the recent past include: gold, silver, barite, boron, hectorite, bentonite, gypsum, tungsten, talc, zeolites, sodium, limestone, sand and gravel, stone, turquoise, and rare earth elements (e.g., cerium, praseodymium, europium, and yttrium). Gold production occurs at two major mines located in the northern portion of the Planning Area at the Briggs Mine in the Panamint Range and the Castle Mountain Mine in the Castle Mountains. Gold prospecting occurs throughout the Planning Area. Inactive small mines and prospects are scattered throughout the Planning Area. (Chapter 7, Figure 3b)

Hectorite and bentonite are produced at the southern Clay Mine north of Death Valley Junction within the western half of the Upper Amargosa portion of the proposed Central Amargosa ACEC. This is one of three hectorite mines in the United States. The world's largest hectorite mine occurs south of the Cady Mountains in the West Mojave Desert Planning Area. The Upper Amargosa portion of the proposed ACEC also contains the access road to the Sidehill Mine.

Rare earth elements are produced at the Mountain Pass Mine, which is not within any proposed DWMA. This is one of two significant rare earth mines in the world. Potential reserves of rare earths are mapped in an area outside the boundaries of the current mine and a small portion of these reserves overlap the proposed Shadow Valley ACEC. These

reserves may be developed over the next 25 years. A small expansion of the mine is currently under environmental review.

Talc is mined from several mines located in the Inyo Mountains and Kingston Range. Limestone is quarried in the Argus Range. Diatomaceous earth used as a moisture absorbent is mined from a small operation located in Piute Valley. Active gypsum mining is occurring on Mesquite Lake and the surrounding area. Many small-scale intermittent mines exist throughout the Planning Area for various mineral commodities.

Sand and gravel and other aggregates are produced within the Planning Area. Although they occur throughout the Planning Area in alluvial fans and other sedimentary deposits, commercial deposits are limited by transportation costs and, therefore, usually located near market areas. These commodities are used primarily for ongoing major highway construction and repair and as aggregate for concrete in urban areas.

Access and water resources are important aspects associated with mineral development and will be an important consideration for future development.

Minor geothermal resources exist at such locations as Tecopa and Ivanpah Valley. However, further development of geothermal resources is not anticipated within the Planning Area. Although oil and gas potential has been identified in some areas of the Planning Area, further exploration is not foreseen.

3.11 LAND TENURE

Lands are acquired, disposed of, or exchanged in accordance with FLPMA and other applicable Federal laws and regulations, to assure more efficient management of the public lands and reduce conflicts with other public and private landowners and facilitate consistency and logic in desert wide land-use patterns. The existing and proposed land tenure strategy for the NEMO Planning Area is discussed in more detail in Appendix N.

3.12 REGIONAL ECONOMY

The largest portion of the Planning Area is within the eastern half of San Bernardino County with a smaller portion in eastern and southeastern Inyo County. In general the area is sparsely populated. In the northern part of the Planning Area is Shoshone with a population of 79 where general public services and emergency services are available. The community of Baker is located in the westerly portion of the Planning Area along Interstate 15 and has a population of 550. It services travelers along Interstate 15, particularly those traveling to Las Vegas. In the southeastern part of the Planning Area is the City of Needles with a population of 5,750 located near Interstate 40 on the banks of the Colorado River.

In the NEMO Planning Area, travel, dining and recreation services contribute a significant portion of the economic activity of the area, and the service industry drives the region's economics (Dean Runyan and Associates 1998). The designation of Death

Valley National Park and the new Mojave National Preserve will likely serve to increase the number of visitors and thereby further increase the service sector. Cattle grazing and mining also contribute to the local area economy.

3.13 AMENDMENT SPECIFIC AFFECTED ENVIRONMENT

Alternative proposals presented in Chapter 2 of this document were screened and evaluated with regard to the 13 critical elements (Council of Environmental Quality, 1980, as amended) and other major land-use planning elements of the human environment.

Elements that are present and potentially affected are described in further detail in this chapter. Elements present but not affected are addressed only briefly herein, and elements not present and not affected will not be addressed further in this document. Elements of the human environment that were identified as likely to be affected by one or more of the alternatives are Vegetation, Wildlife, Soil, Water and Air quality, Wild & Scenic rivers, Wilderness, Cultural resources and Native American values, Wild horses and Burros, Cattle grazing, Recreation resources, Minerals and mining, Vehicle access, Other land uses and Socioeconomic values. Critical elements that are present, but not substantially affected by any of the alternatives, include hazardous and solid wastes, floodplains and environmental justice. Critical elements, which are not present and therefore not affected, include prime and unique farmlands. Table 3.8, which follows, identifies, by amendment, critical elements and other resources, which are potentially affected. Taken in conjunction with the Summary of Impacts Tables at the end of Chapter 2, this table provides an overview of the potential affects of alternatives.

Northern & Eastern Mojave Draft Environmental Impact Statement
Chapter 3: Affected Environment

| Table 3-8: Affected Resources in the NEMO Planning Area | | | | | | | | | | | | | | | | | | | | |
|---|---------|---|----------|---|----------|---|----------|---|------------|---|----------|---|-----------|---|----------|---|---------|---|----------|---|
| Resource | S&G | | | | DT-DWMAs | | | | DT-Grazing | | | | DT-Burros | | | | Vole | | | |
| | Present | | Affected | | Present | | Affected | | Present | | Affected | | Present | | Affected | | Present | | Affected | |
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| Vegetation | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| T&E , Special Status* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Invasive/Noxious Weeds* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Wetlands & Riparian* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Existing ACECs* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Wildlife | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| T & E , Special Status* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Existing ACECs* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Soil-Water-Air | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Water Quality* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Water Quantity | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Wild & Scenic Rivers* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Wilderness* and Visual | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Cultural* -Native American* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Existing ACECs* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Wild Horse & Burro | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Cattle Grazing | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Recreation | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Minerals and Mining | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Vehicle Access | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Land Uses/ Utilities | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |
| Socioeconomic | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | |

* Critical Elements of the Human Environment.

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Chapter 3: Affected Environment

| Table 3-8: Affected Resources in the NEMO Planning Area | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|----------------|---|----------|---|------------|---|----------|---|-------------|---|----------|---|------------------|---|----------|---|-----------------|---|----------|---|-------------|---|----------|--|--|
| Resource | Released Lands | | | | Greenwater | | | | SpeedEvents | | | | Routes of Travel | | | | Tecopa Landfill | | | | Shoshone LF | | | | |
| | Present | | Affected | | Present | | Affected | | Present | | Affected | | Present | | Affected | | Present | | Affected | | Present | | Affected | | |
| | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | | | |
| Vegetation | • | | • | | • | | | • | • | | • | | • | | • | | • | | • | | • | | | | |
| T&E , Special Status* | • | | • | | | • | | • | • | | • | | • | | | • | | • | | • | | | | | |
| Invasive/Noxious Weeds* | • | | • | | • | | | • | • | | • | | • | | • | | | • | | • | | | | | |
| Wetlands & Riparian* | • | | • | | | • | | • | • | | | • | | • | | | • | | • | | | | | | |
| Existing ACECs* | | • | | • | | • | | • | | • | | • | | | • | | | • | | • | | | | | |
| Wildlife | • | | • | | • | | | • | • | | • | | • | | • | | • | | • | | | | | | |
| T & E , Special Status* | • | | • | | | • | | • | • | | • | | • | | | • | | • | | • | | | | | |
| Existing ACECs* | | • | | • | | • | | • | | • | | • | | | • | | | • | | • | | | | | |
| Soil-Water-Air | • | | • | | • | | | • | • | | • | | • | | • | | • | | • | | | | | | |
| Water Quality* | • | | • | | • | | | • | • | | • | | • | | • | | • | | • | | | | | | |
| Water Quantity | • | | • | | • | | | • | • | | • | | | • | • | | | • | | • | | | | | |
| Wild & Scenic Rivers* | | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | | | | | |
| Wilderness* and Visual | | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | | | | | |
| Cultural* -Native American* | • | | • | | • | | • | | • | | • | | • | | • | | • | | • | | | | | | |
| Existing ACECs* | | • | | • | • | | • | | | • | | • | | | • | | | • | | • | | | | | |
| Wild Horse & Burro | • | | | • | | • | | • | • | | • | | • | | | • | | • | | • | | | | | |
| Cattle Grazing | • | | | • | | • | | • | • | | • | | | • | | • | | • | | • | | | | | |
| Recreation | • | | • | | • | | • | | • | | • | | • | | | • | | • | | • | | | | | |
| Minerals and Mining | • | | • | | • | | • | | • | | | • | | • | | | • | | • | | | | | | |
| Vehicle Access | • | | • | | • | | | • | | • | | • | | • | | | • | | • | | | | | | |
| Land Uses/ Utilities | • | | | • | • | | | • | | • | | | • | | | • | | • | | • | | | | | |
| Socioeconomic | | • | | • | | • | | • | | • | | • | | | • | | • | | • | | | | | | |

* Critical Elements of the Human Environment.

3.13.1 STANDARDS AND GUIDELINES

The fundamentals of rangeland health standards and guidelines address ecological components that are affected by all uses of the public rangelands. Currently grazing is the only use with associated resource management activities, that is required to have standards of rangeland health assessed. As part of overall resource management strategies for grazing activities, short-term and long-term implementation strategies must be developed in areas that have been determined not to be meeting rangeland health standards during the assessment process, if grazing is determined to be a contributing factor to the rangeland health conditions. These strategies are designed to improve rangeland health conditions and move rangelands towards meeting identified rangeland standards and guidelines.

The grazing regulations established a set of fallback standards and guidelines that are to be used until the State Director develops a set of regional standards and guidelines. Currently, grazing activities within the Planning Area utilize the fallback standards and guidelines, and assessments for most allotments in the planning area were completed in the 1999 grazing season. The results of these assessments are summarized in Table 3.2. Results of assessments and range condition in specific allotments is described in more detail in the next section, Section 3.13.2, for areas within desert tortoise DWMA's.

3.13.2 DESERT TORTOISE MANAGEMENT AREA BOUNDARY, CATTLE GRAZING AND BURRO MANAGEMENT PROPOSALS:

3.13.2.1 Piute-Fenner Valley

The Piute-Fenner Valley area is approximately 173,850 acres of land bounded by I-40 on the south, the California-Nevada border on the northeast, the Dead Mountains on the east and southeast, and the Mojave National Preserve on the north and west. Approximately 3,960 acres are within Multiple-use class (MUC) "Moderate", 13,700 acres are within MUC "Controlled", with the remainder within MUC "Limited", according to the CDCA Plan, as amended. Multiple-use class applies to the Federal lands within these areas under BLM jurisdiction only. In addition, 34 acres have been segregated from the public land laws⁶.

Vegetation & Related Natural Values: Natural vegetation communities are primarily Creosote bush series and Creosote bush - white bursage series. Less common communities include Big galleta grass series, Indian rice grass series, and Shadscale

6. Notice R-236 published in the Federal Register on November 19, 1966

series. The valley is dissected by washes of various sizes. The larger washes, such as Piute Wash, Woods Wash, and Watson Wash, drain the area from north to south. No special status plants occur in this area.

Wildlife Values: Wildlife species include a variety of animals typical of creosote bush flats and washes in the Mojave Desert. Common species include the following:

Mammals: desert shrew, California myotis, western pipistrelle, big brown bat, desert cottontail, black-tailed hare, little pocket mouse, desert kangaroo rat, Merriam's kangaroo rat, deer mouse, kit fox, coyote, badger;

Birds: red-tailed hawk, golden eagle, prairie falcon, Gambel's quail, mourning dove, poor-will, Bendire's thrasher, Cactus wren, verdin, black-throated sparrow, Brewer's sparrow;

Reptiles: desert iguana, zebra-tailed lizard, long-nosed leopard lizard, side-blotched lizard, desert horned lizard, western whiptail, glossy snake, gopher snake, western shovel-nosed snake, sidewinder, Mojave rattlesnake.

Special status species

Desert Tortoise: This area is considered the most critical geographical unit of desert tortoise habitat on public lands in the East Mojave. The valleys contain good to excellent quality desert tortoise habitat. It provides the central connection in the largest contiguous habitat unit of the East Mojave population, which stretches from the southeastern portion of the Mojave National Preserve through Fenner Valley and Piute Valley into Nevada. An ACEC has been established in Nevada from the State line to the northern extent of the range of the East Mojave recovery unit (See Volume II, Map 2-7 of the Proposed Las Vegas Resource Management Plan and Final Environmental Impact Statement, Las Vegas Field Office, May, 1998).

Wilderness Values: The eastern boundary of the Piute-Fenner Valley area bisects the Dead Mountains Wilderness. The western approximately 13,700 acres of the total of 47,100 acres of the wilderness are within the Piute-Fenner Valley. This corresponds to the wilderness acreage that is Category I and critical desert tortoise habitat. The Dead Mountains Wilderness and its values are described in detail in the BLM Wilderness Booklet - Oct 94, available for review at all Bureau field offices within the California Desert District.

Cultural and Native American Values: The proposed Piute-Fenner Desert Wildlife Management Area was designated class "C" and "L" to protect significant cultural resources and Native American values within the DWMA. Federally recognized affected Native American tribes have identified religious and secular areas of importance within the physical boundaries of the DWMA. Prehistoric cultural resources present within the area include permanent and temporary habitation sites, rockshelters, milling stations, lithic manufacture sites, trails, rock alignments, and rock art sites. Historic resources

within the area include historic mining activity, portions of the Mojave Road, U.S. Route 66, the AT&SF railroad, and the Von Schmidt boundary. The Fort Piute National Historic District and an associated petroglyph area are immediately east of the DWMA within the Mojave National Preserve.

Wild Horse and Burro Values: The Piute-Fenner Valley DWMA overlaps approximately 26,100 acres (15%) of the Dead Mountain Herd Area, which has a "no retain burros" designation in the CDCA Plan and a management level of 0 burros. It is addressed in the Colorado River HMA Plan. This herd area is now almost entirely within designated wilderness. The most recent census for the Dead Mountains Herd Area is approximately 24 burros. Consistent with the CDCA Plan, burro removals shall continue to move the population numbers closer to 0 burros.

Cattle Grazing (and Allotments): Some of the public lands in this area are part of public rangelands with permitted cattle grazing authorized, generally at moderate levels. Piute Valley is an ephemeral allotment with no designated AUM permitted to graze at any particular time. Level of grazing is based on seasonal weather and forage conditions, if a permittee requests use. This allotment has been very infrequently used in recent years.

Linear Utility Corridors: Portions of two major utility corridors transverse the Piute-Fenner Valley area: Corridors R and E. Corridor R is an east-west corridor, which follows and includes lands adjacent to I-40, the southern boundary of Piute-Fenner. This corridor is a contingency corridor and contains a telephone line.

Corridor E is a three-mile-wide north-south corridor that sits at the boundary between the Mojave National Preserve and the western boundary of the Piute-Fenner area, and includes lands in the westernmost portion of the valley. Major utilities located in this corridor include two 230KV alternating current transmission lines and one telephone line.

Recreation Activities and Vehicle Access: To a great degree, desert recreation requires the use of a vehicle either as an integral part of the activity or as a means of accessing a remote destination point. BLM-administered lands in the area are generally available for public recreation. Primary uses include low-level, widely dispersed motorized recreational activities, and the area is primarily a touring through-area rather than a destination area for the general public, as it provides a gateway from the east to the Mojave National Preserve. Other recreational uses in the area include hunting, recreational shooting, and rock hounding. Equestrian trail rides and cattle drives have been authorized in the Planning Area. These activities may focus around a theme, such as the historic Mojave Road, or they may be more athletic in nature.

Mineral Potential and Historic and Current Mining: Within the Piute-Fenner Valley DWMA area, there are nearly 2,700 acres having high potential for an open pit heap leach operation. Any such operation would be subject to overall limitations under a proposed programmatic biological opinion for new surface disturbance of from 1 to 3 % of total land area within the DWMA if any alternative other than No Action is chosen.

Other Land Uses: Other than major transportation and utility corridors on the southern and eastern boundary, the area contains few developments. The most frequent developments are vehicle access routes for residences and other facilities on private lands, connector utility lines, rural dumps, and telecommunications sites. The telecommunications sites are primarily along I-40, and U.S. 95. The dumps tend to be small areas for household items and appliances created by rural residents or campers of yesteryear or today. No permitted landfills are located within the Piute-Fenner area. Although numerous, all of these developments are small in size.

Land Tenure: Approximately 139,000 acres (80%) of the Piute-Fenner Valley area are Bureau-managed public lands. Remaining lands are private (approximately 16%) and State (4%), with most private lands owned by two large corporations. These private lands were originally granted when the transcontinental railroad was built. Catellus Development Corporation is affiliated with the railroad and is responsible for the largest block of private holdings.

Although existing development is low, potential here is relatively higher than in the other areas of the planning area because of the existing checkerboard land ownership pattern. Catellus is currently actively seeking ways to develop lands, either on existing parcels or by exchanging them for parcels in areas more favorable for development. The checkerboard land-ownership pattern is a major basis for potential threats to desert tortoise. Currently no coordinated conservation planning exists across jurisdictional boundaries. Other specific land-use conflicts may also arise from adjacent agencies and landowners pursuing different and potentially incompatible goals, or having inadvertent indirect impacts such as from dumping which attract ravens and other tortoise predators.

An exchange agreement between the BLM and Catellus has been developed which reflects a large-scale exchange program, similar in scope and rationale to the West Mojave Land Tenure Adjustment Project Agreement approved in 1991. In addition to desert tortoise critical habitat, this exchange agreement included wilderness and other lands associated with the California Desert Protection Act of 1994. Phase I of the agreement was approved by Congress in 2000, and 81,000 acres in the planning area was acquired in exchange, much of which is in the Piute-Fenner Valley area. Land tenure acreage numbers within the Piute-Fenner DWMA have not yet been recalculated to reflect this exchange.

3.13.2.2 Ivanpah Valley

The Ivanpah Valley area is approximately 37,280 acres of land bounded by the Mojave National Preserve at Nipton Road on the south and southwest, a powerline road parallel to and south of I-15 across Ivanpah Dry Lake on the northwest and north, and the Nevada border on the east. Activities on the lakebed consist of permitted activities primarily associated with utility maintenance, permitted international wind-dependent events, and ancillary monitoring facilities associated with the MolyCorp Mine. Development potential for the northern portion of the lakebed outside of the Ivanpah Valley DWMA area, particularly adjacent to existing casino developments, is considered high.

Vegetation & Related Natural Values: Natural vegetation communities are primarily Creosote bush series and Mixed saltbush series on the basin floor. Other less common communities include Big galleta series, Indian rice grass series, Fourwing saltbush series, Shadscale series, Winter fat series, Mesquite series and Greasewood series. No special status plants occur in this area.

Other Wildlife Values: Wildlife species include a variety of animals typical of creosote bush flats and playas in the Mojave Desert. Common species are similar to those found in Piute-Fenner Valley. Additional common species associated with Ivanpah Dry Lake include horned lark and various shorebirds.

Special Status Species:

Desert Tortoise: The area is currently designated BLM Category I desert tortoise habitat and, the southern two-thirds is also designated critical habitat. The non-lakebed portion of the valley is excellent quality desert tortoise habitat, with some of the highest population densities in the East Mojave. The southern portion of the lakebed is also occupied by desert tortoise, but the habitat values are lower.

Cultural and Native American Values: Ivanpah Valley is Class “L” to protect identified values, to include cultural values and Native American concerns. Recorded site types in the area include village, temporary camps, lithic scatters, and many historic sites. Historic period sites include portions of the Von Schmidt Boundary and Old Traction Road. The southern shore of Ivanpah Lake has been previously nominated to the National Register of Historic Places.

Cattle Grazing (and Allotments): The public lands in Ivanpah Valley DWMA are also public rangelands with permitted cattle grazing authorized, generally at moderate levels. The entire area is in three perennial/ephemeral allotments with current preference of 1630 AUMs, which allows 165 cattle to graze year-long in the allotments.

Linear Utility Corridors: A small portion of utility corridor BB is within the northern boundary of the Ivanpah Valley area, which is formed by the existing Southern California Edison utility maintenance road parallel to I-15. Corridor BB is an east-west corridor, three-miles wide, which follows and includes lands adjacent to I-15. Most of the utilities have been sited across Ivanpah Dry Lake bed, which is immediately adjacent and generally to the north of the Ivanpah Valley DWMA. Major utilities located in this corridor include one 131 KV Alternating Current Transmission Line (Southern Cal Edison), two gas pipelines and two fiber optic cables. This corridor also includes interstate 15. The southernmost main utility maintenance road parallel to I-15 forms the proposed boundary of the Ivanpah DWMA.

Recreation Activities and Vehicle Access: Organized non-motorized recreation occurs on Ivanpah Dry Lake, including landsailing, kite buggying, long distance archery, and some of the landsailing competitions are considered world-class events. The lakebed is closed except by permit, to prevent damage from other activities that may interfere with international wind-dependent events, which require a very smooth surface. South of the

dry lakebed, the area is primarily used for very low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. Since the area is adjacent to and north of the Mojave National Preserve, the area north of Nipton Road provides dispersed camping areas for some MNP visitors that would prefer not to camp in designated camping areas. Other recreational uses in the area include hunting, recreational shooting, and rock hounding. Occasionally, organized, permitted, motorized or non-motorized touring activities are authorized in the area.

Mineral Potential and Historic and Current Mining: There is a portion of the 5,000-plus acres on Ivanpah Dry Lake having moderate potential for development of salt resources located south of the second powerline maintenance road, that is within the Ivanpah Valley area.. It has a known sodium chloride body at 2,000 feet depth.

Land Tenure: Approximately 94% (35,200 acres) of the total 37,280 acres of the Ivanpah Valley area are public lands, with the remainder of the lands in private ownership.

3.13.2.3 Northern Ivanpah Valley

The Northern Ivanpah Valley area is approximately 29,110 acres of land bounded by I-15 on the south, the California-Nevada border on the east, Mesquite Valley on the north, and the Clark Mountains on the west. The easternmost portion of the valley includes extensive private land and is undergoing substantial development at the Nevada border. This development includes casinos and associated hotels, restaurants and other tourist attractions, including a nine-hole golf course. Primary uses in the Northern Ivanpah Valley area include non-competitive landsailing on the west side of Ivanpah Dry Lake and organized, permitted recreational activities including equestrian trail rides, cattle drives, and dual sport rides.

Vegetation & Related Natural Values: Same as Ivanpah Valley.

Other Wildlife Values: Same as Ivanpah Valley.

Special Status Species:

Desert Tortoise: The area is currently designated BLM Category I desert tortoise habitat, but it was not included in designated desert tortoise critical habitat. Most of the valley is considered good quality desert tortoise habitat, except at or immediately adjacent to areas that have been developed, such as near the state line or I-15.

Cultural and Native American Values: Northern Ivanpah Valley contains numerous sites and specific areas that have been identified as important to Native American tribes. An extensive number of prehistoric sites (e.g., rock art, temporary habitation sites, trails, roasting pits, lithic manufacturing sites and rock shelters) and many historic period sites

(e.g., Ivanpah townsite, mills, mines, shafts, Von Schmidt Boundary and the Old Traction Road) have been recorded within the Northern Ivanpah Valley area.

Wild Horse and Burro: The Northern Ivanpah Valley area includes wild burro concentration areas within the Clark Mountain Herd Area. Although this part of the Herd Area is not designated for the management of burros in the CDCA Plan and associated East Mojave Herd Management Area Plan, a population of burros has been occupying this range since prior to the passage of the 1971 Wild Free-Roaming Horse and Burro Act. There have been periodic removals of burros and currently an estimated population of 126 burros occupies this portion of the herd area. The range land health assessment performed in 1999 determined that:

- 1) the Clark Mountain Grazing Allotment is in healthy condition;
- 2) current grazing levels are appropriate for site conditions;
- 3) management is currently resulting in a sustained yield of resources.

Cattle Grazing (and Allotments): The Northern Ivanpah Valley area is also within public rangelands with permitted cattle grazing authorized. The Clark Mountain allotment is perennial/ephemeral with current preference of 1,303 AUMs, which allows 132 cattle to graze yearlong in the allotment.

Linear Utility Corridors: Two utility corridors transverse the Northern Ivanpah area. One of these is corridor BB, which is an east-west corridor that follows and includes lands adjacent to I-15. In this area, corridor BB splits in two, then rejoins at the California/Nevada state line. Two almost parallel portions of corridor are within the area or follow the southern boundary of the Northern Ivanpah Valley area, which is I-15. Major utilities located in this corridor are two 131 KV transmission lines, two gas pipelines and two fiberoptic cables. Utility Corridor D (the Boulder Corridor) is within the Northern Ivanpah area on its northern boundary, and most of the corridor width would be in the area, except for a slim corridor north of the main corridor road and south of designated wilderness. Major utilities located in this corridor include one 287 KV and two 500 KV alternating current transmission lines, one 500 KV direct current transmission line, one 40 inch gas pipeline and two fiber optic lines.

Recreation Activities: Primary uses on public lands include low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind, as it provides a gateway from the east to the Mojave National Preserve. Other recreational uses in the area include hunting, recreational shooting, landsailing, horseback riding and rock hounding. Occasionally, organized, motorized or non-motorized touring activities are authorized in the area. The Barstow-to-Vegas Competitive race course forms the northern boundary of the Northern Ivanpah Valley area and some of the routes for past B-V events are evident within the Northern Ivanpah area.

Other Major Land Uses: There is some development associated with the casino/hotel complexes located at Primm Nevada (Stateline) including a golf course on the California / Nevada border.

Land Tenure: Approximately 94 percent (27,280 acres) of the 29,110 acres of the Northern Ivanpah Valley area are public lands.

3.13.2.4 Shadow Valley

The Shadow Valley area is approximately 114,060 acres of land bounded by the Kingston Range on the north, I-15 on the south, the Clark Mountains on the east, and the Shadow Mountains on the west. Approximately 38,753 acres are within an area zoned as MUC "Moderate", 31,000 acres are within MUC "Controlled", and 44,307 acres are within MUC "Limited", according to the CDCA Plan, as amended. Multiple-use classes apply to Federal lands under Bureau jurisdiction only. In addition, 380 acres are segregated from the public land laws.¹ Very little development is occurring on public lands except within transportation and utility corridors.

Vegetation & Related Natural Values: Natural communities are primarily Creosote bush series and Joshua tree series. Other less common communities include Catclaw acacia series, Creosote bush - white bursage series, and Hop-sage series. No special status plants occur in this area.

Wildlife Values: Wildlife species include a variety of animals typical of creosote bush series in the Mojave Desert. Common species are similar to those found in Piute-Fenner Valley. Additional common species associated with Joshua tree woodland include common flicker, great-horned owl, desert spiny lizard, cactus mouse, and desert woodrat.

Special Status Species: Desert Tortoise: The area is currently designated as BLM Category I desert tortoise habitat and FWS critical habitat.¹ The valley has good quality desert tortoise habitat, but some signs of shell disease have been observed in the population in recent years. The Clark Mountain ACEC/HMP Plan discussed below has measures that address desert tortoise habitat issues.

Wilderness Values: Approximately 31,000 acres of the Shadow Valley area are located in four designated wilderness areas. The vast majority of the wilderness encompasses the entire Shadow Valley area north of the Boulder utility corridor. This consists of portions of three contiguous, adjacent designated wilderness areas: (1) approximately 20,700 acres in the southern and southeastern portion of the Kingston Range Wilderness (10%), (2) approximately 3,000 acres of the southern portion of the North Mesquite Mountains Wilderness (10%), and (3) approximately 5,600 acres of the southwestern portion of the Mesquite Wilderness (11%). In addition, approximately 1,600 acres of the westernmost portion of the Shadow Valley area overlaps a portion of the Hollow Hills Wilderness (7%). This corresponds to the wilderness acreage that is Category I and critical desert tortoise habitat. For more detailed descriptions of the four wilderness areas and their values, see BLM Booklet "Wilderness Areas, Maps and Information - Oct 94", available for review at all Bureau field offices within the California Desert District.

Cultural and Native American Values: Portions of this area have extremely important sensitivity. These resources are generally concentrated around springs, lake margins and

within the Turquoise Mountain vicinity (aboriginal turquoise mines). Mesquite Valley is currently used as a seasonal collection area by Native American peoples. The area has Native American values.

The Halloran Springs ACEC is located within the proposed tortoise Wildlife Management area. In addition a few small areas of high cultural sensitivity are scattered throughout the area including zones of prehistoric and historic activity. The historic sites are clustered in the vicinity of permanent water sources or near valuable ore deposits. Prehistoric values are associated with water and located near natural resources.

Wild Horse and Burro Grazing: The Shadow Valley area includes wild burro concentration areas and range, and the area overlaps approximately 84,900 acres (27%) of one herd management area that is currently managed for retention of burros. Burro grazing occurring in this area is the most intense within desert tortoise habitat in the East Mojave. The Clark Mountain Herd Management Area (HMA) currently has an Appropriate Management Level of 44 burros, a target number, which was set in the CDCA Plan. The population in the HMA was at its height with the adoption of the CDCA Plan, when it was estimated at 365 animals. The area is managed under the East Mojave HMA Plan, signed in 1984. After several years of removals and adoptions, population levels slowly decreased in the early 1990s. Populations have leveled off in recent years, peaking at about 250 earlier in 1999, prior to the latest removals. The latest census figures for Shadow Valley approximate the herd at about 150 in this area. Additional removals are planned and the AML is targeted to be achieved within three to five years.

Cattle Grazing (and Allotments): The public lands in this area are part of public rangelands with permitted cattle grazing authorized, generally at moderate levels (see Table 2-5 for details). However, cattle grazing in Shadow Valley is the most intense within desert tortoise habitat in the East Mojave. Approximately 104,800 acres (47%) of the Valley Wells Allotment is in the Shadow Valley DWMA (critical habitat).

In the 1980 CDCA Plan, the Valley Wells allotment was rated in "fair" range condition. A follow-up evaluation of the allotment was conducted during the spring of 1999. To date, the range assessment of Valley Wells has revealed some high utilization on key forage species. The native species component of the Fallback Standards and Fallback Guidelines is being minimally met due to the high burro concentration within Shadow Valley. Shadow Valley is the highest area of concentration for cattle and burros in the allotment due to accessible water sources and available forage.

A herd management area (HMA) occurs in part of the allotment and in some areas of Shadow Valley forage usage exceeds 40%. Presently the allotment is meeting all standards but a portion of the allotment, specifically Shadow Valley, is in a downward resource trend. The continuation of cattle and burro grazing at current levels within Shadow Valley could possibly cause the allotment to fail the native species component of the Fallback Standards and the Fallback Guidelines.

Specific parameters on use in the Valley Wells Allotment include the following:

- Cattle waters shall be managed to encourage summer use of higher elevations, outside of Shadow Valley.

Linear Utility Corridors: Utility Corridor D (the Boulder Corridor) transverses the Shadow Valley area, running roughly parallel to and north of I-15. Major utilities located in this corridor are one 287 KV and two 500 KV alternating current transmission lines, one 500 KV direct current transmission line, one 40 inch gas pipeline and two fiber optic lines.

Recreation Activities: Primary uses include low-level, widely dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. The exception is the Turquoise Mountain area, which is a relatively popular visitation area of rock hounds and other recreationists. Other recreational uses in the area include hunting, camping, wilderness hiking, and birding. Occasionally, organized motorized or non-motorized touring activities are authorized in the area. The Barstow-to-Vegas competitive race course transverses the Shadow Valley area through the Boulder Corridor and around the Turquoise Mountain area. Various old routes for the B-to-V events are evident through the area, some within the designated corridor and some outside of it.

Mineral Potential and Historic and Current Mining: The westernmost portion of the area may have potential for rare earth metals. Historic mining has occurred in the Turquoise Mountains in the 10,000 acres accessed by and east of Turquoise Mountain Road.

Land Tenure: Approximately 94 percent (106,960 acres) of the total 114,060 acres of land area are public lands. Most of the non-Federal lands consist of the two sections originally granted to the State for schools, with a few additional private parcels.

3.13.2.5 Pahrump Valley

The Pahrump Valley is bounded by the Nopah Range on the west and northwest, the Nevada State line on the east, Pahrump on the northeast and the Inyo - San Bernardino county line on the south. Scattered development is occurring on public lands associated with the dispersed rural population in the valley. This area is one of the less frequented gateways to Death Valley National Park and other recreational destinations from Nevada and is also an area used for dispersed recreation, and occasionally permitted OHV recreational activities.

Vegetation & Related Natural Values: Natural communities are primarily Creosote bush series. Other less common communities include Creosote bush - white bursage series, Joshua tree series, Indian rice grass series, Greasewood series, Mesquite series, and mixed saltbush series on the basin floor. No special status plants occur in this area

Wildlife Values: Wildlife species include a variety of animals typical of creosote bush series in the Mojave Desert. Common species are similar to those found in Piute-Fenner

Valley. Additional common species associated within Pahrump Dry Lake include horned lark, various shorebirds, and Great Basin spadefoot toad.

Special Status Species: Desert Tortoise: This area includes approximately 172,000 acres of BLM Category III desert tortoise habitat. The area was not included as USFWS critical habitat. The valley has fair quality desert tortoise habitat. Approximately 85% of the total desert tortoise habitat (146,200 acres) are public lands. Category III desert tortoise habitat includes almost 15,000 acres of designated wilderness, almost 124,000 acres of MUC "Limited", just over 32,000 acres of MUC "Moderate" and 1,200 acres of "Unclassified" lands.

Cultural and Native American Values: Sensitive cultural values (high and very high) occur within this unit. The whole range of site types from simple, to complex, occur. Some of the sites are associated with presumed lacustrine adaptation. A portion of the planning unit includes areas traditionally used by federally recognized Native American tribes. Permanent village sites and temporary habitation sites are also located within this region. The Old Traction Road crosses the area.

Wild Horse and Burro Grazing: The Pahrump Valley area overlaps a small portion of the easternmost extent of the Chicago Valley Herd Management Area, which has an appropriate management level of 28 horses and 28 burros. The current horse herd is at four, and the burros are at 7 in the HMA. Forage is often supplemented by feedings offered by area residents, and forage use throughout the HMA is generally low.

Cattle Grazing (and Allotments): The public lands are also public rangelands with permitted cattle grazing authorized. The Pahrump Valley allotment is perennial/ephemeral with current preference of 353 AUMs, which allows 175 cattle to graze from February 15th to February 28th and 175 head March 1 to April 15 in the allotment.

Recreation Activities and Vehicle Access: Primary uses on public lands include low-level, dispersed motorized recreational activities. Casual public users primarily tour through this area rather than having particular destinations in mind. Other recreational uses in the area include hunting, landsailing and birding. Occasionally, organized, permitted, motorized or non-motorized touring activities are authorized in the area.

Mineral Potential and Historic and Current Mining: There are approximately 23,000 acres having potential for the occurrence of metallic mineral resources, 640 acres having potential for the occurrence of industrial minerals, 380 acres having the potential for the occurrence of construction materials within critical habitat for the desert tortoise. In addition, there are nearly 50,000 acres having potential value for oil and gas (within the overthrust belt) within critical desert tortoise habitat.

3.13.3 AMARGOSA VOLE ACEC PROPOSAL

Biological: Critical habitat for the Amargosa Vole has been designated (Federal Register Volume 49, No. 222, 1984). It includes approximately 2,440 acres of public land located

south of Shoshone, along the Amargosa River, primarily within the Grimshaw Lake Natural Area ACEC located north of Tecopa, California, and the Amargosa Canyon Natural Area located south of Tecopa (see Chapter 7, Figures 9a and b and Appendix H). Additional public lands, outside the ACEC are included in this critical habitat unit and are located north and east of the Grimshaw Lake Natural Area ACEC. This critical habitat designation also encompasses private lands located east of Grimshaw Lake Natural Area and State lands located between the Amargosa Canyon Natural Area and Tecopa. Public and private lands that exist between these two ACECs form a critical link for Amargosa vole between the two natural areas. Lands north of the Grimshaw Lake Natural Area ACEC continue the riparian habitat found in the ACEC and are also good quality vole habitat.

Special Status Plants and Animals: The China Ranch Canyon Area is a mile-wide and three-mile long stretch of public lands located adjacent and east of the existing Amargosa Canyon Natural Area ACEC. This canyon is a tributary of the larger Amargosa River and supports little water flow except at springs and following heavy precipitation events. The riparian, wetland and spring habitats present within this canyon are suspected to support Amargosa voles, Amargosa southern pocket gophers (*Thomomys umbrinus*), several species of endemic springsnails (*Pyrgulopsis* spp.), as well as a host of other riparian obligate and endemic species.

The type locality for the Amargosa vole has been identified as a small spring located adjacent to the Amargosa River in the vicinity of Shoshone, California. It is unclear whether or not the species still occurs in this portion of the Amargosa River, though the riparian and adjacent hill terrain are known to support several endemic species, particularly rare invertebrates such as the Shoshone Cave whip-scorpion (*Trithyreus shoshonensis*) and Shoshone Cave millipede (*Colactis briggsi*). To protect the former species, the Shoshone Cave HMP Area was designated in the CDCA Plan and an HMP (BLM and CDFG 1982) was subsequently prepared.

Another Amargosa River endemic species, the Tecopa pupfish (*Cyprinodon nevadensis calidae*), once occurred in this vicinity but is considered extinct due to human alteration of associated spring habitat. A third Amargosa River endemic, the Shoshone pupfish (*Cyprinodon nevadensis shoshone*), is known only from a small spring (Shoshone Spring) located on private lands in the town of Shoshone. The continued existence of this species is precarious, as its sole habitat area is threatened by human alteration, including reduced instream water flow, pollution, exotic plants and competition with the introduced mosquito fish (*Gambusia affinis*). A fourth Amargosa River endemic species, the rare Amargosa pocket gopher (*Thomomys bottae amargosae*) is also known from the Shoshone-Tecopa river corridor.

Portions of the Amargosa River between Shoshone and Grimshaw Lake at Tecopa Hot Springs, California, support varying stand densities of a productive mesquite (*Prosopis* spp.) bosque -saltgrass meadow-wetland complex, important to Amargosa pupfish (*Cyprinodon nevadensis amargosae*), numerous neotropical migratory bird species, a variety of desert bats, and wild horses (Chicago Valley herd). However, in the Amargosa River vicinity of Shoshone a considerable amount of this habitat is located on private

lands. Only small pockets of this habitat type occur on public lands in this river segment, separated by barren stream segments.

Introduced animals, particularly the domestic cat (*Felis catus*) in the vicinity of Tecopa Hot Springs, and wild horses (*Equus caballus*) in the vicinity of Death Valley Junction, as well as the spread of the exotic plant saltcedar (*Tamarix ramosissima*) along the entire river, are also an ongoing concern in their relation to listed species, riparian and wetland habitats. An exotic plant removal and riparian restoration program has been initiated by the BLM in both the Amargosa Canyon and China Ranch Wash areas of the Amargosa River, and is anticipated to benefit Amargosa vole; neotropical migratory bird species, such as the State and federally-listed and endangered least Bell's vireo (*Vireo bellii pusillus*) and the State listed endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*); numerous bat species; and a host of other riparian obligate species.

Water: The Amargosa River is the focal hydrologic system of the Northern and Eastern Mojave (NEMO) Planning Area. The hydrologic systems of the southern Great Basin and northern Mojave Desert are generally characterized by deep water tables. They are also considered primarily closed groundwater basins.

One of only two large rivers in the Mojave Desert, the free-flowing Amargosa is largely subterranean. It begins its southerly, largely underground flow near Beatty, Nevada. A 10 mile-length segment of the river supports shallow, perennial water flow near in Oasis Valley in Nevada, but this "bitter water" river then generally flows in a sub-surface fashion as it bisects the remainder of the Amargosa Desert in Nevada. It flows adjacent to Stateline, Nevada and then southerly through the towns of Death Valley Junction, Shoshone and Tecopa, in California. It crosses State Highway 127 and terminates in the lowest elevation area in the United States: Badwater Basin, within Death Valley National Park (DVNP).

Water runoff from the Bullfrog Hills, Yucca Mountain, Shoshone and Spring Mountains, in Nevada, all contribute to Amargosa River water flow in California. The latter Spring Mountain area is suspected to provide a large amount of this runoff contribution. The Lower Carson Slough tributary of the Amargosa, drains Ash Meadows and the southern portion of the Amargosa Desert in Nevada. These watersheds contribute to a largely subterranean Amargosa River at Franklin Playa in California. Several mountain ranges and alluvial basins in California, particularly Eagle Mountain and the Resting Spring Mountain Range in the upper California reaches of the river, the Nopah and Kingston Mountain Ranges, as well as California Valley, progressively add to central Amargosa River water flow. Major tributaries include the aforementioned Lower Carson Slough in the northern reach of the river, China Ranch Wash in the central reach, and Salt Creek in the southern reach of the river. Drainage from the Kingston Range to the east-southeast and from Ash Meadows Wildlife Reserve on the other side of Pahrump Valley in Nevada funnel into this narrow, steep canyon in route to the Amargosa ACEC, Grimshaw Lake ACEC.

The Amargosa flows extensively underground, surfacing perennially at only two areas in California (Shoshone-Tecopa hot springs and Tecopa townsite-Sperry siding). Ephemeral surface flows and salt flats are common in the Upper reaches of the Amargosa River. Shallow perennial water flow and clay-hole ponding are common in the Shoshone Reach of the river. Perennial ponding, as well as ephemeral mudflats, are common in the Grimshaw Reach of the river. A substantial perennial water flow begins in the Amargosa Canyon Reach, which continues to the Sperry siding of the abandoned Tonapah & Tidewater Railroad. Between Sperry siding and the eastern boundary of Death Valley National Park at State Highway 127, water flows over the years have alternated between intermittent and perennial flows, with ponding occurring in ephemeral years. Shallow, perennial flows beneath State Highway 127 have been recorded as the norm in recent years, following largely ephemeral flows in the early 1990's. These ephemeral and/or perennial surface water flows contribute to the subterranean flow, which terminates in Badwater Basin.

Lands along the river in California are largely in Federal ownership, i.e., approximately 53.25 riverine miles are public lands managed by the BLM and approximately 45 additional riverine miles occur within DVNP. Substantial private ownership (3.5 riverine miles) occurs along the river in the vicinity of Shoshone, both north and south of State Highway 178. A degree of river diversion and modification has also occurred on the north (Shoshone) side of State Highway 178. A total of 2.5 riverine miles are also privately owned in the Grimshaw Lake Reach of the river; as is a total of 2.5 riverine miles in the Amargosa Canyon Segment.

Cultural: The Central Amargosa Vole habitat (Amendment # 5) includes approximately 6,900 acres of public lands, portions of which are within the designated Amargosa and Grimshaw Natural Area ACECs. Sensitive historic (principally the Tonapah and Tidewater Railroad) and prehistoric (temporary camps and possible village sites) cultural resources occur in the identified habitat both within and outside of the existing Amargosa Canyon and Grimshaw Lake Natural Area ACECs. Significant cultural resources (primarily associated with nearby springs, associated riparian areas) as well as Native American seasonal collection areas and traditional use areas have been identified. Recently acquired lands south of China Ranch include both prehistoric and historic values including milling sites, lithic scatter, trails, and a historic structure built in 1903. The habitat is currently managed under MUC "L" guidelines. Lands identified for exchange out of Federal ownership contain a known prehistoric campsite, historic period mine and house and an identified 20th century grave.

The T&TRR, abandoned and dismantled in the 1940's, parallels the river for a majority of its length in California. This railroad once crossed the river on wooden bridges at several sites in California, though only three historic crossings occurred in the high water flow segment of the river occurring between Shoshone and Sperry siding. A pedestrian trail now exists on the T&TRR, which is breached in many areas between Shoshone and Sperry siding. Few roads occur immediately adjacent to the river in the Shoshone to Sperry siding segment, although State Highway 178, Tecopa Hot Springs Road and Old Spanish Trail Highway do cross this river, widely spaced over a 21-mile span of the river. Several roads parallel and cross the river in the Sperry siding to State Highway 127

segment of the river. Further, an access road to the popular Dumont Dunes Off-highway Vehicle Area parallels the river in this segment for four miles, crossing the river once at the entrance to this public land use area.

Recreation: Both the Amargosa Canyon and Grimshaw Lake Natural Area ACECs are popular hiking and nature appreciation areas, as is China Ranch Wash. China Ranch is a popular tourist attraction at the west end of the canyon, surrounded by the Amargosa ACEC, and includes a date farm and trailed, riparian area in the midst of this canyon. Both ACECs have been designated as national Watchable Wildlife Sites and are listed on numerous maps as well as in several guidebooks. No active livestock or mining operations occur within these areas, although geothermal operations were once proposed for the area adjacent to Grimshaw Lake Natural Area and trespass livestock grazing is an ongoing concern in Amargosa Canyon. Motor vehicles are prohibited within these natural areas, with the exception of parking areas located at major trailheads. Fire activity is fairly low, and resource advisors are used to address fire suppression activities.

Tecopa is one of a few towns in the northern half of the Planning Area, and has a small permanent population and a larger seasonal population during the winter months. Located immediately north of Tecopa are hot springs that support several hot spring resorts and campgrounds. The larger town of Shoshone is located north of Tecopa. Shoshone is located at the junction of State Highways 127 and 178. Its tourist attractions include its own hot springs located within the town and its location as the eastern gateway to Death Valley National Park.

The 160 acres of public lands being considered for reclassification (made available for disposal, by sale or exchange, to private parties) are located south of and within a mile of the main road of the town of Tecopa in the southern half of T20N, R7E, Section 10, SBBM (see USGS 7.5 minute topographical quadrangle map named "Tecopa, CA"). Residential development is occurring on all but the canyon side portion of the parcel.

Mineral Potential and Historic and Current Mining: In 1967 an exploratory well was drilled. Strong artesian flow occurs from this well near the boundary of the existing and proposed ACEC extension in SW1/4 Section 28, T.21 N., R.7 E. and just north of Tecopa's hot springs. The water continues to rise to the surface and flow into the marsh. In 1970 the temperature was 100 degrees at the surface and flowing at 150 to 200 gallons per minute.

The Inyo County Transportation Department produces between 500 and 600 tons per year of sand and gravel from a borrow pit within the west boundary of the study area and just northeast of Furnace Creek Road in NW1/4 Section 29, T.21 N., R. 7 E. There are no other current mining operations in the Amargosa area.

The area has moderate potential for the occurrence of saline, sodium borate deposits based on past production of borax from a spring from 1882 to 1890. The potential for production of borates in this area within the foreseeable future (next 25 years) is probably low based on a lack of production over the last 100 years.

The entire Planning Area in the vicinity of Tecopa is within an area classified by BLM as valuable prospectively for geothermal resources based on a well which produced hot water in the recent past in addition to hot springs in the general area. The potential for future production of geothermal energy within the Planning Area boundaries is probably low. Any future development of geothermal resources would probably be limited to such things as the heating of bathhouses or buildings.

Regarding the Upper Amargosa portion of the Planning Area, Southern Clay Products has applied for a mineral patent on about 225 acres in Section 31, T.27 N., R.5 E, and Section 6, T.26 N., R.5 E. Hectorite clay at this site has been mined since 1974 and occurs in a shallow, elongated deposit oriented northwest to southeast situated southwest of the Amargosa River drainage. In Section 31 the patent application block comes within 700 feet of the Amargosa River and in Section 6 it comes within 1,300 feet. Southern Clay Products has two open pit mines for hectorite clay within the area and is currently mining at a rate of about 5,000 tons per year. This area is within lands classified by BLM as a Potential Geothermal Resources Area by BLM, but the potential for occurrence is difficult to assess because there is no data on ground water temperature. Therefore the potential for development is also difficult to assess, although development, if hot water were discovered, would probably be limited to such things as heating bathhouses and buildings.

3.13.4 LOWER CARSON SLOUGH T&E PLANTS

Vegetation: Vegetation is sparse throughout the Lower Carson Slough drainage, where a salt-encrusted alkaline playa dominates. However, the State and federally-listed endangered Amargosa niterwort; the federally-listed threatened Ash Meadows gumplant; the federally-listed threatened spring-loving centaury, the BLM designated sensitive plant Tecopa birdsbeak (*Cordylanthus tecopensis*), iodine weed (*Suaeda torreyana ramosissima*), and saltgrass (*Distichilis spicata*) occur patchily throughout the drainage. The Lower Carson Slough drainage area bisected by Ash Meadows Road has been designated as the Salt and Brackish Water Marsh UPA in the CDCA Plan.

Numerous special status plant surveys have been conducted in the Lower Carson Slough, including a 1993 survey undertaken by DVNP personnel. Older surveys (1970s) were used by the USFWS to delineate critical habitat units for two listed plant species, Amargosa niterwort (1,200 acres) and Ash Meadows gumplant (1,968 acres which includes California -340 acres and Nevada - 1,628 acres), in the mid 1980s (Federal Register Volume 50, No. 97, 1985). The latter critical habitat unit is situated at the California-Nevada border, 2.5 miles north of Ash Meadows Road; whereas the former critical habitat unit is situated on both sides of Ash Meadows Road (See Chapter 7, Figure 10).

The critical habitat designation for Amargosa niterwort and Ash Meadows gumplant lists depletion of local and source water aquifers, road construction and maintenance, trampling by wild horses, mining and off-road vehicle activity as the primary threats to Carson Slough plants and associated habitat. Amargosa niterwort plants and several acres

of associated playa habitat were damaged within the critical habitat unit in the course of both trespass activities and legal mining claim marker installation.

Mineral Development: Mineral exploration in the vicinity of Franklin Playa and in the Lower Carson Slough area north of Ash Meadows Road has been ongoing for several years, though no large-scale mining operation has been proposed for the area. The subject area is dotted with prospect pits for such commodities as clays, zeolites, borates or sodium minerals. The nearest recently active mine is an open pit mine for zeolite located one and a quarter miles east of the southeast corner of the Carson Slough.

The subject ACEC proposal is within lands classified as a Potential Geothermal Resource Area by BLM. The potential for occurrence of geothermal resources in this area is difficult to assess because there is no data on ground water temperature, but if hot water were discovered, it would probably be limited to such things as heating bathhouses and buildings. The subject ACEC proposal is also within lands classified by BLM as prospectively valuable for sodium resources based on historical prospecting permits for sodium minerals on Alkali Flat three miles to the south¹.

Wild Horse and Burro: The Chicago Valley wild horse herd uses an artesian spring in the center of Franklin Playa and regularly traverses the playa between Death Valley Junction and Eagle Mountain.

Land Use / Development: The town of Death Valley Junction, one of the main gateways to DVNP, currently supports only a handful of residents, though the town is an occasional stop for tourists visiting DVNP and the Death Valley Junction Opera House. Park tourism is the primary recreational activity in the immediate area. Road maintenance of Ash Meadows Road, on both sides of the state border, also occurs regularly.

3.13.5 SILURIAN HILLS BAT HABITAT MANAGEMENT PLAN (HMP) PROPOSAL

Wildlife: The Silurian Hills area is a semi-mountainous region centrally located in Silurian Valley. It is bounded on the west by a flat plain, Silurian Dry Lake and Salt Creek; on the east by a flat plain and the Shadow Mountains; with Kingston Wash and Valjean Valley located to the north; and the Hollow Hills located to the south. Public lands in this area total approximately 7,400 acres, with a scattering of patented lands located immediately to the south.

Numerous washes dissect the plain that surrounds this mountainous island, and both cliff faces and crevice slopes are common in the Silurian Hills. Mine shafts and adits are also quite numerous, and at least four bat species are known to use these shafts and adits as roosting, hibernation or maternity sites. Additional bat species are suspected to use the area as well. Habitats crucial for a wide variety of desert bat species surround the Silurian Hills such as desert washes, springs, desert riparian areas, sand dunes, crevice slopes and mountains. The Kingston Wash is suspected to be a major bat foraging use area and flight travel corridor into the Kingston Mountains. The Salt Creek Hills and riparian area are

both a major bat foraging and roosting area and are suspected to serve as a crucial flight travel corridor into the Avawatz Mountains, where numerous spring foraging, and bat roosting sites occur. This same corridor is also important for bat species that use the Ibex Dunes and Dumont Dunes as well as portions of DVNP.

Mineral Development: The Silurian Hills region is within an area having moderate to high potential for the future discovery of metallic minerals, mainly silver. The subject area has mostly low potential for talc resources, but two areas of high potential, one in the west half where there are known occurrences, and one in the southeast corner where there has been past production.

Mines in the Silurian Hills have produced lead, copper, silver, gold, and talc. In the Riggs District, the patented Riggs mine, within 1,500 feet of the southern boundary of the area, produced 200,000 ounces of silver up to 1920 and has been idle since except for recent drilling. Assays at another claim group in the southeast part of the Silurian Hills identified silver values to 2.85 ounces per ton and copper to 36 pounds per ton. Additional mining claims, located ½ mile south of the area have been actively worked for silver and lead for many years.

Idle talc mines known collectively as the Patricia-Blue White-Ceramic zone occur in the southeast corner of the Silurian Hills. The Ceramic mine produced up to 1,000 tons from 1940 to 1942. Workings consist of shallow exploratory excavations, several adits, and a 40-foot inclined shaft and several cuts. The patented Silver Lake talc deposits, 3 miles to the south of the area, produced over 160,000 tons from 1915 through the 1950s.

The potential for future development is difficult to assess. Unless commodity prices increase, production of metallic minerals such as lead, silver, and gold would probably be limited to small, two-man operations in underground workings such as adits. Talc production is anticipated to be low based on the lack of production within the area over 50 years, the small volume of past production, and the fact that no plans of operation have been received.¹

Cultural and Native American Values: The area contains evidence of early twentieth century mining and one recorded petroglyph site. Additional historic period mining sites are located south of the identified area. A portion of the Tonapah and Tidewater railroad line traverses the area.

Vehicle access: The Silurian Hills and adjacent land receive light permitted and casual recreational use. This is a challenging place for desert touring and exploration. Travel is difficult and rough because there are generally few routes and none are maintained. Occasional route proliferation is associated with visitation to some of the historic mining areas.

3.13.6 RELEASED WSA MUC PROPOSALS

The following are descriptions of areas proposed for a Multiple-Use Classification other than the MUC prescribed in the CDCA Plan.

Cerro Gordo: The 21,244 acres of public lands surrounding the Cerro Gordo ACEC and National Register of Historic Places District that was originally designated as MUC Moderate were designated as high sensitivity under the CDCA Plan. Lack of inventory data precluded a higher sensitivity rating although there were indications that the mesas probably contained unrecorded cultural resources. This area has been subject to some recent archeological assessment as a result of mineral activity. Additional data and analysis has identified substantial resources and values, after the initial classification, which would warrant consideration of MUC L. Additional sites have been located that are probably associated with the mining town of Cerro Gordo, a National Register property. This is an area of high sensitivity for prehistoric resources as well.

Surprise Canyon: The approximately 4,390 acres of public lands remaining in the Surprise Canyon ACEC would continue to be managed as an ACEC. Approximately 8,778 acres of formerly public lands is now under NPS jurisdiction and not subject to public lands designations, including ACECs. Approximately 849 of the 1,920 acres of BLM-managed lands released from wilderness review is an area where changing conditions, and additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive resource values and for consistency with surrounding lands. This is the eastern portion of Middle Park Canyon. This area is prime habitat for a large and diverse group of plants and animals, including sensitive species. Elevations range to 7,000 feet in the eastern portion of the area, and topography is often steep. When the area was determined not suitable for wilderness, the record stated that the recommendation should be “implemented in a manner, which will use all practical means to avoid or minimize environmental impacts”.

Greenwater: Approximately 3,000 of the 34,720 acres of BLM-managed lands released from wilderness review is being considered for a change of Multiple-Use Class. It is an area where changing conditions, and additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive raptor, bighorn sheep, Category III desert tortoise habitat, and other wildlife and plant community values and for consistency with surrounding lands. This area was originally designated as MUC M along northern boundary of released lands in the 1980 CDCA Plan based on mineral values. This 3,000-acre area is adjacent to 849 acres designated as the Greenwater Canyon Cultural ACEC.

Eagle Mountain: The CDCA Plan classified these lands as MUC "M" east of the T&T and MUC "L" west of the T&T. The rationale was that there was ongoing mining activity (west) and to protect sensitive wildlife, cultural, riparian values to the east. (Three sites determined eligible for the National Register and highly sensitive wildlife). The values that provided the rationale for MUC “L” are greater on the lands with the underlying MUC "M" classification, which include lands sacred to native, indigenous, tribes and T&E plant locations recorded since the CDCA Plan analysis.

Dumont: The CDCA Plan classification for these lands is MUC L and MUC "M". This area is immediately adjacent to and south of the Dumont Dunes OHV Open Area and adjacent to and north of the Salt Creek ACEC. Recent new information has been gathered on MUC M lands in conjunction with surveys conducted on expansion alternatives for Fort Irwin National Training Center identifying 27 previously unidentified highly sensitive cultural resources. The historic Tidewater and Tonapah Railroad bed forms the eastern boundary of this area, which additionally has now been determined eligible for the National Register of Historic Places. The previously unidentified Mojave fringe-toed lizard now designated BLM-Sensitive (not identified in the CDCA Plan, 1980, as amended) have been found on lands now classified MUC "M". There is a high potential for additional habitat for this species to the west, south and east of the Dumont Dunes area. Therefore these lands are being considered for a change in Multiple-Use Class

Boulder Corridor E & W: Approximately 4 of 10 miles of the corridor within the western end of the Shadow Valley Desert Tortoise DWMA is being considered for a MUC change from M to L based on critical desert tortoise habitat. The other 6 miles outside of critical habitat is not being considered for change from MUC M. There would be approximately 12 additional corridor miles to the east outside of proposed DWMA's in Mesquite Valley at the Nevada border, which is being considered for a change from MUC L to M based on consistency with the level of activities on surrounding lands. These lands are primary corridors for major utilities between the Los Angeles and Las Vegas Basins.

Avawatz: Almost all of the underlying area of released lands was designated as MUC M in the CDCA Plan to provide access for exploration and development of mineral potential and recreational values. Additional data and/or analysis indicate a need for consideration of MUC L to protect sensitive resource values. However, substantial new information has not been identified since the CDCA Plan analysis. This area is adjacent to MUC M lands and lands managed by the military.

East of China Ranch: The CDCA Plan underlying classification for this 4,010 acres is primarily MUC L, with two areas of MUC M, each under 500 acres: one located in the northeastern portion encompassing a portion of the canyon and the plateau that was the Old Bon Mesa mill site; and the other in the southeast portion along a portion of Sperry Wash. The CDCA rationale for MUC M was to facilitate historic mining access. In the past decade, the Bon Mesa site has been cleaned up and both hazardous and non-hazardous materials have been removed from the site. The surrounding MUC L lands are a highly sensitive wildlife corridor, which includes the main China Ranch Wash and side canyons including a portion of Sperry Wash, that provide riparian habitat for many endemic species including potential habitat for the federally endangered vole.

Mesquite Spring: The original MUC in the CDCA Plan was M in order to provide vehicle access for recreation and mineral exploration while mitigating impacts of permitted uses on desert resources, particularly for historic and prehistoric values. Access is now provided into the Mojave National Preserve, which surrounds this area on two-thirds of its length. Adjacent to the parcel on the third side is the Crucero/Mesquite

Hills Cultural ACEC. Historic and prehistoric resources are now known to be more common and more sensitive than originally believed in this area, based on information developed in conjunction with ACEC planning. Recreation use is affected by the proximity of the Rasor Open Area to the northwest, and vehicular use is primarily focussed in the Mesquite Spring area. Therefore the entire area is being considered for Multiple-Use Class L.

3.13.7 GREENWATER CANYON PROPOSED ACEC DELETION

Prior to the California Desert Protection Act of 1994, the Greenwater Canyon ACEC included approximately 3,000 acres of public lands in the Greenwater Mountains of southeastern Inyo County and was established for cultural resource protection. Approximately 73 percent of the ACEC is now under Death Valley National Park jurisdiction. There are no known archaeological sites or cultural resource values in the remaining 820 acres of public land, although a minor amount of desert wash and riparian habitat would be affected. BLM Public lands in the area are managed under the existing Greenwater Canyon ACEC Plan.

3.13.8 ORGANIZED COMPETITIVE VEHICLE EVENTS

Vegetation: The Barstow-to-Vegas course crosses creosote bush (*Larrea tridentata*) shrubland, blackbrush (*Coleogyne ramosissima*) shrubland, mixed desert shrubland, and desert wash. No federal or state listed threatened or endangered plant species are known to occur along the routes.

Creosote bush communities vary considerably in composition and diversity. This plant community is found throughout the region at elevations of 1,000 to 3,000 feet. Creosote is the dominant species with generally burrobush (*Ambrosia dumosa*) or four-winged saltbush (*Atriplex canescens*). Other typical species are joint-fir (*Ephedra* sp.), little-leaved ratany (*Krameria parvifolia*), thornbushes (*Lycium cooperi*, *L. andersoni*), galleta grass (*Hilaria rigida*), Indian rice grass (*Oryzopsis hymenoides*), mallow (*Sphaeralcea ambigua*) and desert straw (*Stephanomeria pauciflora*).

The blackbrush community occurs on the slopes of Clark Mountain at elevations of 4,000 to 5,000 feet. Blackbrush is the most common species. Others are spiny mendora, California buckwheat, joint-fir and desert rue (*Thamnosoma montana*). Washes contain acacia, snakeweed, and spear-leaved Brickellia (*Brickellia arguta*).

Mixed desert shrubland and desert washes contain a variety of species such as rabbitbrush (*Chrysothamnus paniculatus*), paper bag bush (*Salazaria mexicana*), Joshua tree (*Yucca brevifolia*), Mojave yucca (*Yucca schidigera*), beavertail (*Opuntia basilaris*), and silver cholla (*O. Echinocarpa*).

The vegetation along the 1990 proposed course has not fully recovered from previous years' events. Some shrubs have died and numerous plants show signs of damage. These plants exhibit broken branches, splits in the main stem/trunk, and overall reduction

in the extent of aerial canopy. Due to the drought conditions being experienced in the desert region, plant vigor and regrowth potential is poor. Reduced growth rates, die-back, extended dormancy, and in some cases death of the plant are common signs currently being exhibited by plants in the desert. Regrowth along the race corridor has been poor.

The proposed route around Solomons Knob in the Needles Resource Area was last used in the 1974 race. A 1990 field inspection of that segment showed little regrowth of vegetation. After 16 years, plant cover was ocularly measured to be only 10 percent of that found adjacent to the race course. Much of that portion of the course has no plant cover, and effects of soil erosion are evident. Portions of the route utilize an existing dry wash and sparse vegetation is normal.

One federal candidate species, Rusby's desert mallow (*Sphaeralcea rusbyi* spp. *Eremicola*), occurs directly adjacent to the Barstow-to-Vegas course in the vicinity of the Clark Mountains. This low growing perennial herb exists along a four-mile stretch adjacent to the powerline road north of the Clark Mountains.

There is a potential that bicolored penstemon (*Penstemon bicolor* spp. *Bicolor*) a federal candidate and a Nevada watchlist species, occurs adjacent to the course in Nevada. The habitat for this species is similar to that found along the Barstow-to-Vegas course, and has been found within 5 miles of the course (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

Wildlife: The race course as depicted in the CDCA Plan passes through 33.5 miles of BLM Category I and 16.4 miles of Category III desert tortoise habitat. This alignment also crosses approximately seven miles of bighorn sheep habitat in the vicinity of the Clark Mountains. Wildlife and plant values are further described in the Wildlife and Vegetation Elements of the CDCA Plan.

Habitats crossed by the Barstow-to-Vegas course include creosote bush (*Larrea tridentata*) shrubland, blackbrush (*Coleogyne ramosissima*) shrubland, mixed desert shrubland, and desert wash. Wildlife species characteristic of these desert habitats include coyotes (*Canis latrans*), black-tailed jackrabbits (*Lepus californicus*), white-tailed antelope squirrels (*Ammospermophilus leucurus*), desert kit foxes (*Vulpes macrotis arsipus*), red-tailed hawks (*Buteo jamajcensis*), horned larks (*Eremophila alpestris*), zebra-tailed lizards (*Callisaurus draconoides*), and sidewinder rattlesnakes (*Crotalus cerastes*).

The course crosses approximately seven miles of desert bighorn sheep (*Ovis canadensis nelsoni*) habitat in the Clark Mountain area. The desert bighorn sheep is a BLM sensitive species and is fully protected by the State of California. The Clark Mountain herd was estimated in 1988 to have 150 sheep. Bighorn regularly travel between different ranges, and some movement of bighorn sheep between the Clark Mountains, New York Mountains, and neighboring ranges in Nevada is likely.

In addition to the desert bighorn sheep, several wildlife species of special management concern are known to occur in this region. These species are the gilded northern flicker (*Colaptes auratus chrysoides*), Virginia's warbler (*Vermivora virginiae*), hepatic tanager (*Piranga flava*), gray vireo (*Vireo vicinior*), Bendire's thrasher (*Toxostoma bendirei*), California grey headed junco (*Junco hyemalis caniceps*), and the Kingston Mountain chipmunk (*Tamias panamintinus acrus*). The gilded northern flicker is listed by the State of California as endangered. It has been observed on top of Clark Mountain, several miles away from the course in different habitat, and should not be affected by Barstow-to-Vegas race activities. The Kingston Mountain chipmunk has a montane distribution and should be similarly unaffected by event activities. Remaining wildlife species listed above are more widely distributed in the eastern Mojave Desert and do not have any legal status as sensitive species. No other wildlife species listed by the State or Federal government as threatened or endangered are known to occur in the area other than the desert tortoise which is discussed below.

The primary habitat type of the Nevada portion of the course is a creosote bush- white bursage assemblage similar to the California communities (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

Desert Tortoise: The desert tortoise (*Gopherus agassizi*) was State listed as "threatened" in California on June 22, 1989, and Federally-listed as "threatened" on April 2, 1990. The desert tortoise receives legal protection afforded under both the California Endangered Species Act and the Federal Endangered Species Act of 1973, as amended.

Prior to the desert tortoise being either State or Federally-listed, the BLM had initiated efforts to protect the species. In November of 1988, the BLM Director issued a document titled "Desert Tortoise Habitat Management on the Public Lands: a Rangewide Plan". This Rangewide Plan directed BLM District Managers to assign tortoise habitat areas into three Habitat Categories. On February 22, 1989, the California Desert District Manager assigned categories on an interim basis within the California Desert District.

| Estimated miles of race course crossing desert tortoise Category I, II, and III habitats. | | | | | |
|--|---------------------------|----|-----|-----------------|-------|
| | Tortoise Habitat Category | | | Non category | Total |
| | I | II | III | | |
| # of miles: | 45 | 35 | 35 | 55 | 170 |

Desert tortoise population densities have also been based on transect data obtained during the California Desert Plan Program, transects obtained for the BLM under contract in Nevada (Burge 1989), and by BLM staff in the Barstow and Needles Resource Areas in 1989.

In Nevada, approximately seven miles of the course in Category 2 desert tortoise habitat, which has moderate to high densities of tortoise. Approximately 35 miles of the course is Category 3 desert tortoise habitat, which has either low or low to moderate densities of tortoise (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

Soil: Soils along the course routes occupy two relatively distinct physiographic areas: (1) uplands consisting of old terraces, alluvial fans, and low desert foothills, and (2) mountains and lowlands consisting of alluvial flood plains, terraces, fans, and basin rims. These soil types are moderately to highly susceptible to erosion and compaction. Disturbances that cause the soil to breakdown or become compacted may cause erosion and the release of fine materials that are susceptible to wind erosion.

Current conditions along the race corridor are variable. Some areas in washes are mostly repaired through normal water flow patterns. Some roads used are in acceptable condition, due in part to repair by natural processes and road maintenance activities. However, the majority of the course route through non-road areas of the desert remains rutted, contains “whoop-de-doo” or is deeply “washboarded”, and exhibits powder-like surface soils where desert pavement has been removed and soil consistency disturbed. Soil cover is reduced in many instances (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

Water: The area has no permanent surface water. Surface flow occurs only after intense rainfall periods, and it soon infiltrates the dry desert soils or evaporates. Some water reaches the playas, which become inundated for short periods of time.

Air quality: Portions of northeastern San Bernardino County are within the Federal Mojave Desert ozone nonattainment area and all of San Bernardino County is within the Federal San Bernardino County PM₁₀ Nonattainment Area. Under State standards, the San Bernardino County portion of the Planning Area is an ozone nonattainment area and the entire plan area is classified as nonattainment for PM₁₀.

Cultural Resources: The Barstow-to-Vegas course passes through one recorded historic site situated on private property at the Silver Lake townsite (CA-Sbr-2922). However, there are no known cultural resources on the course. Three other recorded cultural resources are located on public lands adjacent to the course with other recorded sites located within one mile. In Nevada, cultural resource inventories have been conducted along the proposed course, which include surveys described in CR5-1198N, 184N, 1508N, 1509N, 247N, 268N, and 87N. No cultural resources were found during the course of these surveys. Based on data review in these survey documents, sufficient efforts have been taken to identify and evaluate significant cultural resources within the area of effect per 36 CFR Part 60 (Section 106 of the National Historic Preservation Act), (1990 Environmental Analysis CA-060-EA0-01).

Wilderness: The Barstow-to-Vegas course has utilized roads along the boundaries of several WSAs. In 1983, the course used routes within the Soda Mountains WSA that were the subject of a court inspection and were approved by the court. The route of the proposed action does not enter any WSAs, but routes that form boundaries of WSAs are proposed for use (1990 Environmental Analysis CA-060-EA0-01). With the passage of the California Desert Protection Act, the following wilderness areas form boundaries along the course: Hollow Hills, Kingston Range, Mesquite Mountains, and Stateline.

Recreation: Total membership in the AMA in 1996 was around 180,000 of which 27,000 resided in California. There are about 100 permitted competitive events of all kinds held each year in the CDCA involving on average about 25,000 participants. In the past only about five percent of the total number of yearly participants took part in the long distance point-to-point events.

The Barstow-to-Vegas race was one of four competitive vehicle corridors established in the CDCA Plan. These four particular events, the only OHV competitive events that took place outside OHV Open Areas, had involved approximately 1,300 participants on the average each year up to 1990. The Stoddard Valley-to-Johnson Valley event was run only in 1980. The Johnson Valley-to-Parker was last run in 1986 with 173 participants and has only been run five times since 1980. The Barstow-to-Vegas occurred under permit annually from 1983 to 1989 with 1,200 participants. The Parker 400 had been permitted by the BLM annually since 1972 and involved a total of 425 participants, 300 of which race (except in 1989 when the California loop was not run) on the California side (Analysis from the 1990 Environmental Assessment CA-060-EA0-01). Note that there have been no major long distance point-to-point competitive motorized events in the CDCA since 1989 including the annual B-to-V Motorcycle race.

Socioeconomic: Expenditures by participants and spectators involved with the Barstow-to-Vegas race had in the past contributed to the local economies of several communities along the race course, including Barstow and Baker in California, and Stateline (now known as Primm) in Nevada. This race had been a major fundraiser for the AMA's District 37, which used most of the proceeds to fund umbrella insurance policies that allowed small, affiliated clubs to run other races. The AMA considered this race to be important to the well being of its members and related organizations. There was a national, as well as international, participation and interest in this race. The effect of this race on local economics and on the well being of the motorcycle community was a major issue. The Barstow Chamber of Commerce's 1989 annual income based on retail sales taxes was \$278,231,000 (Analysis from the 1990 Environmental Assessment CA-060-EA0-01).

3.13.9 MOTOR VEHICLE ACCESS: ROUTES OF TRAVEL

Desert visitors who venture off of the major access routes that cross the NEMO planning area described in Section 3.9, generally spend some of the time on the network of maintained and unmaintained gravel and dirt roads, ways, trails, and navigable desert washes. There are many of these "routes of travel" in the California Desert Conservation Area.

"According to one study, the CDCA has 15,000 miles of paved and maintained roads, 21,000 miles of unmaintained dirt roads, and 7,000 miles of vehicle-accessible washes. However, these routes are not evenly distributed throughout the CDCA, and desert topography and vegetation do not (always) prevent, and sometimes encourage, cross-country travel of motor vehicles. Desert soils and vegetation retain the marks of this kind

of travel for many years, except in a few places where occasional rains, windstorms, and flashfloods erase them. Thus, one vehicle traveling cross-country can create a new route of travel. The proliferation of roads and trails in the CDCA has resulted in a serious problem in some areas and provides the most difficult management issue for the BLM and the public.

Many of the Desert's loveliest and most fragile resources can only be enjoyed by use of vehicle access routes, but these routes are quickly destroyed if vehicles travel everywhere. Most people who go to the desert revel in its spaciousness and the feeling of solitude and freedom it provides. However, growing numbers of vehicles and uncontrolled expansion of this network of roads and trails may damage this solitude, and heavy-handed regulations to control this traffic would certainly affect this sense of freedom.

The question of managing access to the desert is especially sensitive. Vehicle access is confused with the use of vehicles for play. Public comments make it clear that motorized-vehicle access and off-highway vehicle play need to be clearly separated and managed differently.

While the Bureau is responsible for vehicle use on public lands, much of the control of vehicle travel in the desert is the responsibility of the user, whether the goal is recreational or commercial. The Bureau of Land Management does not and will not have the funds or staff to oversee vehicle use throughout the desert at all times. Therefore, rules for vehicle use must be fair, understandable, easy to follow, and reasonable if they are to be publicly accepted. Only commitment by the public, the owners of these lands, will insure success of rules and guidelines"

From California Desert Conservation Area Plan (1980, as amended)

From 1973 to approval of the CDCA Plan in 1980, BLM managed access under the Interim Critical Management Program (ICMP). An integral part of that program was the release of a series of 22 maps covering the entire CDCA. These maps illustrated the ICMP designations and delineated a network of access routes compiled from existing maps, public input and field review, supplemented with aerial coverage completed by December 31, 1978.

With approval of the CDCA Plan, the new OHV area designations became effective, and the ICMP maps and designations became invalid. However, until implementation of the CDCA Plan Motorized-Vehicle Access Element, as amended, is complete, "existing" routes of travel as identified for the ICMP mapping developed for the CDCA Plan may be used in all MUC M and MUC L lands which are designated as "Limited" areas for motor-vehicle access. Routes closed under the ICMP guidelines are to remain closed. As implementation proceeds, inclusive of the route designation process associated with the NEMO planning effort, some route limitations may change. Inventory is based on the "existing" routes network, as updated consistent with page 80 of the CDCA Plan, as amended (March 1989), and which is further described in Section 2.10.

Average route density in the NEMO planning area is lower than regions of the CDCA that are closer to major metropolitan areas. In the southern third of the planning area, two major freeways, Route 66, SH 127 and US 95, carry well over 90% of the motor-vehicle traffic. Portions or all of routes covering approximately 8,560 miles are proposed for designation within the 350,000 acres of inventory area.

Driving for pleasure, recreational touring, and thoroughfare transportation generally occurs in two-wheel drive vehicles on paved or graded dirt roads, or routes that received a substantial amount of use. Many recreational pursuits may be accomplished in varying degrees with a two-wheel drive vehicle. However, activities in much of the planning area, including permitted activities, hunting, rockhounding, technical OHV driving, wilderness hiking, and backroads exploration may require four-wheel drive vehicles for access. Overall use on most of these routes is light, with a few exceptions, where specific destinations are involved. Special recreational events may also draw increased use on specific routes for short durations, primarily in the late fall through spring months. Regular maintenance of linear utilities and communication sites, mineral exploration and development, and other land uses also result in some use of these routes.

3.13.10 TECOPA LANDFILL PROPOSED MUC CHANGE

Biological: Plant and wildlife habitat values have largely been lost at this site. The area is currently managed under MUC "L". Any proposals require 30 days for thorough environmental analysis and development of mitigation measures to protect adjacent plant and wildlife communities that might be impacted. Public lands activities are subject to MUC "L" guidelines which emphasize use of existing routes and minimizing surface disturbance.

Cultural: There are no identified cultural resources or Native American values within this area.

Land Use: The existing CDCA MUC L classification does not allow for the sale of public lands. This is not consistent with BLM policy, given the existing use of the site as a landfill, unless closure of the landfill is currently underway. Closure to State standards is not currently feasible by the operator and would not provide for the short-term solid-waste disposal needs of area residents.

3.13.11 SHOSHONE LANDFILL PROPOSED MUC CHANGE

Biological: Plant and wildlife habitat values have largely been lost at this site. The AREA is currently managed under MUC "L". Any proposals require 30 days for thorough environmental analysis and development of mitigation measures to protect adjacent plant and wildlife communities that might be impacted. Public lands activities are subject to MUC L guidelines which emphasize use of existing routes and minimizing surface disturbance.

Land Use: The existing CDCA MUC "L" classification does not allow for the sale of public lands. This is not consistent with BLM policy, given the existing use of the site as a landfill, unless closure is underway. Closure to State standards is not currently feasible by the operator and would not provide for the short-term solid-waste disposal needs of area residents.

3.13.12 WILD & SCENIC RIVERS

After completion of the 1980 CDCA Plan, regulations were published in 43 CFR 8350 (7 FR 173, Sept. 7, 1982) addressing designation of waters for the National Wild and Scenic Rivers Systems on public lands. The first step in this process is identifying what river(s) segment(s) are eligible for Wild and Scenic Rivers designation. In the NEMO planning area, two rivers, the Amargosa River and Cottonwood Creek, has been identified with four eligible segments. The process and the Amargosa River, including its three eligible segments, are further described in Appendix O. Cottonwood Creek and its eligible segment is further described in Appendix S and Surprise Canyon in Appendix T.

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